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THE PROSPECT FOR 1852.

IF we would enable ourselves to understand and anticipate the future, we must study the past. Similar causes tend always to produce similar effects. Six years have now elapsed since the aid of the whole agricultural interest of the country was invoked to procure the abolition of the system of 1842, under which the consumer was every where throughout the country being brought to take his place by the side of the producer; and it can scarcely be deemed amiss now to review the arguments then used with a view to secure that aid, and to examine the results thus far obtained, with a view to understand what is the prospect for the future. With a view so to do, we now give the reader the following extract from the Treasury Report for 1845:—

"We have more fertile lands than any other nation, can raise a greater variety of products, and, it may be said, could feed and clothe the people of nearly all the world. The home market, of itself, is wholly inadequate for such products. They must have the foreign market, or a large surplus, accompanied by great depression in price, must be the result. The States of Ohio, Indiana, and Illinois, if cultivated to their fullest extent, could of themselves raise more than sufficient food to supply the entire home market."

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"Such is the rigor of our restrictions, that nothing short of a famine opens freely the ports of Europe for our breadstuffs. Agriculture is our chief employment; it is best adapted to our situation; and if not depressed by the tariff, would be the most profitable. We can raise a larger surplus of breadstuffs, and a greater variety, and at cheaper rates, than almost any other nation. Remove, then, from agriculture all restrictions, and by its own unfettered power it will break down all foreign restrictions, and, once being removed, would feed the hungry and clothe the poor of our fellow-men throughout all the densely peopled nations of the world. But now we will take nothing in exchange for those products but specie, except at very high duties; and nothing but a famine breaks down all foreign restrictions, and opens for a time the ports of Europe for our breadstuffs."

The home market, we were then assured, was "totally inadequate" for the products of agriculture, which was, and should be, our chief employment; and by devoting ourselves more exclusively to it, we could, as we were told, "feed the hungry and clothe the poor" of the world. What, however, is the object of commerce? Is it not an exchange of equivalents? If so, what is the benefit to be derived from trading with people who are hungry and naked because of inability to produce food or the materials of clothing? None, assuredly! The shopkeeper prefers to trade with people who produce largely, and have therefore much to give in exchange for what they need to buy; and in proportion to the extent of their production, he grows rich; while precisely as their production diminishes, does his business decrease, and does he grow poor. If he desired only to "feed the hungry and clothe the naked," he would prefer to trade with the occupants of alms-houses; and the larger his trade with them in the first year, the smaller would it be in the second and

third, until at length he would become bankrupt. So precisely must it be with a nation; for the laws which influence, and should influence, the proceedings of an individual, are precisely the same as those which should influence those of a community. The object of the tariff of 1842 was that of promoting exchanges between our own citizens, who are the largest producers of the world, and are so because they exercise the largest amount of self-government, or individuality, and therefore most readily combine their efforts for the increase of their productive power; and the effect of that policy was seen in the fact, that the quantity of iron produced at home, to give in exchange for food and clothing, rose, in the brief period of its existence, from 200,000 to 850,000 tons; the quantity of railroad iron, from nothing to 100,000 tons; the quantity of cotton cloth, from 267,000 to 500,000 bales; the quantity of woolen cloth, from 55,000,000 to 80,000,000 pounds; the quantity of coal, from 1,100,000 to 3,000,000 of tons; the quantity of lead, from 585,000 to 787,000 pigs; and manufactures of all descriptions in proportion.

All these commodities required to be exchanged. And for what? The miner of ore and of fuel required food, and clothing, and house-room. The furnace-man and the mill-operative, the man who quarried the stone for the furnace and the mill, the wood-cutter and the sawyer who got out the lumber, and the carpenter who prepared it, and the machinist who wrought upon the engine, the spindle and the loom, required the same; and thus the *whole value* of this vast increase in the product of iron, lead, fuel, and cotton and woolen cloth, went to swell the demand for the raw products of the earth; and that increase, in the four years of the tariff of 1842, exceeded one hundred millions of dollars, four fifths of which were expended for food alone. This, however, was but a part of the effects produced by the adoption of the system which looked to making a market on the land for the products of the land. Every man must be fed; and if he cannot obtain food in exchange for labor given to the making of iron or cloth, he must raise it for himself; and instead of being a customer to the farmer, he must become a rival to him. The labor that, under the tariff of 1842, was given to producing commodities to be given in exchange for food, must, without that tariff, have been given to the production of food, by which to swell the surplus, and thus diminish the price; and such had been the effect of the compromise tariff, which had closed the great domestic market for produce while increasing the number of producers. This erroneous state of things, which it had required years to bring about, required years to correct; and therefore it was that the prices of food were low in the early years of the new system. The correction was, however, being gradually made; and long before this time, the domestic market would so have grown as to have rendered our farmers independent of the course of things in Europe. It was not, however, so ordained. The domestic market was to be prostrated, and the farmers were induced to aid in its prostration, and the tariff of 1846 became the law of the land. What were the anticipations of its author, in regard to its effects, may now be seen by a perusal of the following extract from his Report of 1846:—

"Experience is against the protective policy. . . . From a long peace, Europe is becoming so densely populated that her poorer and more uncertain climate affords a less adequate supply of food from year to year for her rapidly increasing population. Under a system of low duties, and a reciprocal interchange of commodities, it will be the interest not only of Great Britain, but also of most of the Continent of Europe, to take a large supply of food from us; but by arresting this exchange of their fabrics for our products, it becomes their interest, and in fact a necessity, to look for and encourage markets else-

where; and also, by extraordinary means and high government bounties, to drive capital into agriculture there, to supply the wants of their people, unable to purchase our products, for which we demand specie in exchange. If we receive the fabrics of Europe in exchange for our products, it will be to their interest to encourage and enlarge that commerce; and it must go on rapidly augmenting, until our country becomes the granary of Europe, and our export trade of food shall even exceed that of cotton, great as that is destined to be under a system of low duties."

Our country was to become the granary of Europe; that is to say, of France, which has become the largest exporter of flour to England; of Germany, Poland, Russia, Spain, and Italy, which have little to export but food, and which must continue to be exporters of it until they shall determine to bring the consumer to the side of the producer, by making a market at home, and thus diminishing their necessity for seeking one abroad. How far this prediction has been realized, may now be seen by the following statement of our exports of food to all the countries of Continental Europe in the years 1849-50, the latest for which we have as yet returns:—

	Wheat.	Flour.	Indian corn.	Indian meal.	Rye meal.	Rye, oats, and other small grain.	Apples.	Potatoes.	Rice.
Russia, . . . .	.....	.....	.....	.....	.....	.....	.....	.....	\$70,936
Prussia,	\$288j	\$ 15	.....	.....	.....	\$10,787	.....	.....	2,325
Sweden and Norway, . . . .	.....	519	.....	.....	.....	.....	.....	.....	67,517
Denmark, . . . .	.....	.....	.....	.....	.....	.....	.....	.....	54,340
Hanover, . . . .	.....	.....	160	.....	.....	.....	.....	.....	.....
Holland, . . . .	.....	3,789	.....	.....	.....	440	.....	.....	119,026
Spain, . . . .	.....	.....	.....	.....	.....	.....	.....	.....	438
Portugal, . . . .	.....	.....	.....	.....	.....	.....	.....	.....	5,243
Italy, . . . .	.....	.....	.....	.....	.....	.....	.....	.....	.....
France,	208	.....	.....	\$4	.....	63	.....	\$51	220,982
Belgium, . . . .	.....	.....	.....	.....	.....	\$175	.....	205,290	.....
Austria, . . . .	.....	575	.....	.....	.....	.....	.....	.....	.....
Total,	\$496	\$4,938	\$160	\$4	.....	\$11,270	\$175	\$51	\$746,097

Such is now, at the end of four years, the market of Continental Europe, of which we were to become the granary, and thus to feed the hungry and clothe the naked of those countries! The whole anticipation was simply absurd and ridiculous, and the publication of it was evidence of the writer's entire want of knowledge of the true principles of commerce. He knew well that the growers of wheat, or of cotton, within the Union, did not need to exchange with each other; and yet he looked to establishing between the producers of food in America, and the producers of food in Europe, a system of exchanges so vast, that in a little time our exports of food should exceed those of cotton, great as the latter were "destined to be under a system of low duties." It seems, however, never once to have occurred to him to inquire what those people—poor and hungry people—were to produce, to give in exchange for all the food and all the cotton we were to export. Most of the nations of the continent have but few manufactures; and among them all there is not a single one that is not an exporter of raw produce, except those which have adopted protection—to wit, France, Belgium and Germany; and the whole amount of our exports to them of food, with the exception of rice, which they are unable to produce, and must therefore buy, is under \$12,000; and there exists not the slightest probability of an increase; and that such was the fact, the Secretary should have known.

The only manufacturing country in the world that habitually imports food is Great Britain and Ireland; and it was with a view to secure to ourselves the supply of that country, that the tariff of 1846 was passed. What

were the anticipations in relation to the growth of that market, will be seen on a perusal of the following extract from the Report of 1847:—

"It is not the freight, then, that created the chief obstacle to the interchange of products between ourselves and foreign countries, but the duties. When we reflect, also, that the exchange of products depends chiefly upon diversity, which is greater between our own country and the rest of the world, than between the different States of the Union, under a system of reciprocal free trade with all the world, the augmentation arising from greater diversity of products would equal the diminution caused by freight. Thus the Southern States exchange no cotton with each other, nor the Western States flour, nor the manufacturing States light fabrics. Diversity of products is essential to exchanges; and if *England and America were united by absolute free trade, the reciprocal exchanges between them would soon far exceed the whole foreign commerce of both*; and with reciprocal free trade with all nations, our own country, with its pre-eminent advantages, *would measure its annual trade in imports and exports by thousands of millions of dollars.*

"In my last annual report, and that which preceded it, it was proved that the home market was wholly inadequate for our vast agricultural products. We have long had, for grain and provisions, the undivided markets of our own people. But these are not sufficient; and in a single year we have, with abundance of food retained at home, supplied the world with an addition at once during the last year, as shown by table AA, of \$41,332,282 in value of breadstuffs and provisions, bringing the value exported that year up to \$65,906,273. Our manufacturers could not have consumed this surplus, or their non-consuming machines, which are substituted in their workshops for the labor of man. If the energy of our own people can add \$41,332,282 to the export and supply of our breadstuffs and provisions in a single year, what could they not add to such products if they enjoyed free of duty the markets of the world? By table BB, it appears that the augmentation of our domestic exports, exclusive of specie, last year, compared with the preceding, was \$48,856,802, or upwards of 48 per cent.; and at the same rate per cent. per annum of augmentation, would amount in 1849, per table CC, to \$329,959,993, or much greater than the domestic exports from State to State. The future per centage of increase may not be so great; but our capacity for such increased production is proved to exist, and that we could furnish these exports far above the domestic demand, if they could be exchanged free of duty in the ports of all nations."

How far the results have corresponded with these sanguine anticipations, will now be shown.

The export of food of all descriptions to Great Britain and Ireland, in the year 1845-6, under the tariff of 1842, when the domestic market was so rapidly increasing, amounted to \$10,392,239. In the following year—that of the famine in Ireland—it rose to the large sum of \$27,843,150, thus proving that the vast increase of domestic consumption, and diminution of necessity for resorting to foreign markets, had been attended with no diminution of power to avail ourselves of them when prices were sufficiently high to make it advantageous so to do.

From that time to the present, we have had in operation the tariff of 1846, under which the mills and furnaces of the country have been in a course of being gradually closed, and the whole growth of population driven to seek agriculture as the only means of obtaining employment; and during that period, the following has been the movement in our commerce with that country in reference to breadstuffs and provisions of all descriptions:—

1847-8,	\$19,538,846
1848-9,	23,699,891
1849-50,	12,271,063
1850-51,	8,104,253

Thus proving that the power to go to foreign markets diminishes as the necessity for so doing increases.

As our readers engaged in the production of the various articles of export may desire to understand how much they, each of them, benefit by the substi-

tution of this foreign market for the great domestic one now being closed, we give the details in the following copy of an official document obtained from the Treasury:—

Export of Breadstuffs and Provisions to England, during the year ending June 30, 1851.

Butter and cheese,	\$ 570,686
Pork, bacon and lard,	1,361,169
Wheat,	634,920
Flour,	4,172,882
Indian corn,	1,022,143
Indian meal,	12,681
Rye, oats, and other small grain and pulse,	33,662
Ship bread,	1,302
Potatoes,	28
Rice,	294,580
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	\$8,104,053

N. SARGENT, Register.

Treasury Department, Register's Office, Dec. 29, 1851.

The producers of butter and cheese obtain a market in Great Britain and Ireland to the extent of little more than \$500,000; and those of Indian corn, and of hogs, to the extent of less than \$2,500,000; and the whole food-producing population obtain a market for \$8,100,000, or less than the consumption furnished by the coal trade of Pennsylvania, *the closing of which alone*—to say nothing of the iron, woolen and cotton trades, so vastly superior in amount—*would be attended with consequences more disastrous to the farmers than the total cessation of the export of food to all Europe*: and yet it was to obtain the market of Great Britain for food, that the farmers of the country were induced to abandon the policy of 1842, that was so rapidly bringing the spindle and the loom, the hammer and the anvil, to take their natural places by the side of the plough and the harrow!

Instead of having become the granary of all Europe, or being in a way so to become, we are now contending with all Europe for the *daily diminishing market of Great Britain*; the consequence of which is, that it is perpetually burdened with a stock so large as to forbid the prospect of a rise in price; and from week to week we are informed that "beef remains without improvement," that "hams and shoulders are inactive," and that "cheese is dull;" while flour sells in the Liverpool market, freight, duty, and commission paid, at from 17s. to 20s. (\$4 to \$4.80) per barrel!

For the last three years, there has been a steady diminution of prices, as is shown by the following table of the average prices of wheat throughout Great Britain, per Imperial quarter of 560 lbs., being about nine and one third of our bushels:—

		1849.	1850.	1851.
October	4,	43.01	42.10	37.08
Do.	11,	42.07	42.05	37.01
Do.	18,	42.00	41.10	36.07
November	1,	41.08	40.11	36.06
Do.	8,	41.05	40.07	36.01
Do.	15,	41.01	40.02	36.02
Do.	22,	40.11	40.00	36.05
Do.	29,	40.09	40.01	36.07
December	6,	40.03	40.01	36.09
Do.	13,	39.11	40.01	36.11

Thirty-six shillings per quarter is equal to ninety-four cents a bushel, delivered in England, *freight and duty paid*.

Every where, throughout Europe, the farmers are storing up their grain in

hopes of a rise in prices, as is shown by the following statement of imports into Great Britain for the last six months :—

	Wheat. Qrs.	Flour. Cwts.	Indian Corn. Qrs.	Oats. Qrs.
5th July, - - -	451,010	463,623	316,495	149,018
5th August, - - -	480,426	473,421	213,308	234,057
5th September, - - -	393,751	649,400	160,286	190,732
10th October, - - -	300,280	624,476	193,211	106,676
5th November, - - -	141,926	246,307	133,594	51,102
5th December, - - -	133,863	294,510	126,710	44,162

From the circular to which we are indebted for this statement, we take the following passage, which we recommend to the careful consideration of those of our farming readers who yet have doubts of the fact that the tendency of the *British* free trade system is that of enabling the people of England to fix the prices of all they desire to buy and of all they desire to sell :—

"Ultimately, prices will no doubt be regulated abroad by the British demand. Those who have speculated on the prospect of an advance in our markets have already begun to discover their mistake, and the accounts from the Baltic are of a more subdued tone than for some time past."

Our own farmers are every where storing up their wheat, and trade in food diminishes, notwithstanding the fact that our whole increase of population is being driven to the raising of food, as is shown by the following statement of the trade of Rochester, the greatest grain market of the country :—

	Shipped in	1850.	1851.
Flour, barrels, - - -	- - -	553,078	501,621
Wheat, bushels, . - -	- - -	235,402	166,841
Corn, " - - -	- - -	68,459	50,856
Barley, " - - -	- - -	69,504	31,383
Oats, " - - -	- - -	8,625	2,000

The inspections of flour at Baltimore for the last six years have been as follows :—

1846,	850,116
1847,	959,456
1848,	736,441
1849,	764,519
1850,	896,592
1851,	912,498

The receipts of flour at Boston in the same period has been as follows :—

1846, - - - - -	743,123
1847, - - - - -	1,020,497
1848, - - - - -	909,595
1849, - - - - -	1,007,964
1850, - - - - -	789,681
1851, - - - - -	690,520

The receipts at Philadelphia have been—

	Corn, bu.	Oats, bu.	Rye, b
Receipts in 1846, - - -	2,374,484	414,417	17,160
1847, - - - - -	2,560,191	533,147½	52,972½
1848, - - - - -	3,525,404	433,293½	67,048
1849, - - - - -	2,948,811½	456,771½	46,231
1750, - - - - -	2,180,326½	247,448	44,746
1851, - - - - -	2,158,674½	495,191	27,670

In this period, the population of the country has increased thirty per cent., and for the last four years the whole increase has been driven to agriculture. If we look farther west, we see a similar state of things. The Cleveland

papers inform us that the following is a comparative view of the provision trade of that place for the two past years:—

	1850.	1851.
Number of cattle packed, - - - - -	12,700	6,500
Tierces of beef shipped, - - - - -	15,700	6,000
Barrels of beef shipped, - - - - -	1,500	2,700

This falling off is, as those journals inform us, due to "*the present low prices of tierce beef in Europe*, and to the fact that packers are aware that a fair stock of last year's packing yet remains in New-York."

The *Cincinnati Prices Current* publishes a table of the number of cattle and hogs assessed in seventy-six counties in Ohio for the years 1850 and 1851. The totals are:—

	1850.	1851.
Cattle, - - - - -	1,153,517	995,172
Hogs, - - - - -	1,529,727	1,345,814

The Michigan Central Railroad Company informs its stockholders that "there was a diminution of freight receipts in the sum of \$9,208 21, growing out of *the exceeding low price of wheat and flour in the Eastern markets*. This leaves a large stock of these articles in the hands of the producer for future transportation, the crop of 1851 being the largest ever raised in Michigan and the adjoining States."

The effect of this upon the farmers of Illinois is thus described by the *Chicago Democrat*, which looks anxiously to the raising of a foreign loan, by aid of which a market may be made for food and labor, and thus "arrest the flood of adversity that now threatens this region of country:"—

"PRESSURE AT CHICAGO.—Our moneyed institutions are calling in their loans. . . There is no demand for land at the prices of the past season. . . . A great deal of money has been loaned to the farmers, and they can hardly pay the interest. . . . We never saw so many people from the country trying to borrow money. . . . Our lumbermen are alarmed. . . . The low price of produce undoubtedly has some effect upon their business. . . . This year the farmers can hardly make their year's ordinary expenses balance, and so they have nothing to expend in lumber. . . . The old adage of 'wheat in and lumber out' is not repeated this year."

Such are the results of the tariff of 1846, and such they are throughout the whole grain-producing region of the Union. And how could they be otherwise? In 1846, Illinois exported 800,000 pigs of lead, the labor employed in producing which made a large and annually increasing market for food; whereas that market has now so much diminished that the whole export of the last year was but 325,000 pigs; while the import of foreign lead, as given in the Treasury Report just published, has been more than *forty-three millions of pounds*, costing more than *a million and a half of dollars*, and requiring to pay for it almost two thirds of our whole exports to Great Britain of corn and pork. In 1846, we produced 850,000 tons of iron; whereas we now produce about 400,000 tons, and import of it to the extent of nearly \$8,000,000, requiring to pay for it nearly all the breadstuffs and provisions exported to Great Britain.

Such having been the results of the past five years, we may now look to the future.

The population of this country is increasing at the rate of almost a million per annum, and must double itself in little more than twenty years; and as the present policy of the nation looks exclusively to the extension of agriculture, it is obvious that if it be continued, there must be a rapidly increasing surplus that cannot be consumed at home, requiring a rapidly increasing

market abroad; and if that market be not found, the effect must be most disastrous to our farming interests. It is seen that the demand for Europe has diminished; and how far it is likely to grow, may be judged from the fact that the recent census of Great Britain and Ireland establishes, that not only has population ceased to increase, but that in the last five years it has actually decreased. From this it is obvious that that market tends still further to diminish, while facts occurring on the continent of Europe prove that the facilities for supplying Great Britain with what she may require are steadily increasing, and that thus there must be a constantly increasing competition for a diminishing market. The effect of this is already seen in the low prices of grain in England, followed by a corresponding reduction in this country, in which wheat now sells at a price almost as low as it has ever done. Vast quantities have accumulated in the granaries of the interior, waiting for the occurrence of unfavorable harvests abroad; but the great extent of the field of cultivation for the regular supply of the market of Great Britain, would seem almost to preclude the possibility of such a rise as would afford to our farmers remunerating prices.

An examination of the commercial history of this country in regard to food, would lead to the same result as has heretofore been shown in regard to cotton, to wit, that the price of the whole has invariably been dependent, not upon the size of the crop, but on the quantity for which it was necessary to seek for a market abroad. In years in which we have had none to export, the prices have been high; whereas in the years in which we had much to sell, prices have been always low, as is now the case. It would seem, therefore, that the remedy for the present low prices would consist in adopting the measures necessary for diminishing the necessity to look to England for a market, by making a market at home. How readily that might be done, will be obvious to all who mark the very small amount of our export to that country during the past two years, and compare it with the vast market that was created between 1843 and 1847, by the demand for the supply of the persons employed in the production of cloths, and iron, and fuel, and in the preparation of machinery for those purposes. The amount of labor employed in building mills and furnaces, opening mines, and creating the machinery to be used in them, could not have been estimated at less than \$30,000,000 per annum, all of which went to the purchase of the fruits of the earth, while the additional labor required for the production of the cloth, the iron, and the fuel produced, amounted to twice or thrice that sum, making a total of at least \$100,000,000. Not only have we ceased to build mills and furnaces, to be occupied by consumers of the fruits of the earth, but we have closed up a large portion of those built in 1844, '45, and '46, and have thus compelled labor to seek employment in agriculture, to the injury of the whole body of agriculturists, whether farmers or planters; as every man transferred from the work of building mills, mining coal, or smelting iron or lead, becomes a producer of food instead of a consumer, and thus swells the surplus which we already raise, for the purpose of supplying a market that must steadily decrease. A continuance in this course, with our vast increase of population, must inevitably be followed by the most ruinous consequences in the reduction of the value of both labor and land; and it would seem to be worthy of the careful consideration of our farmers, whether their interests would not be promoted by a return to that policy under which the domestic production of iron and of cloth, and the domestic market for cotton and sheep's wool, and for food, increased with the rapidity that was manifested from 1843 to 1847.

For the last two years, they have been storing up their grain, in the hope

of a demand from England, consequent upon short crops in future years, similar to that which occurred in 1846; but the probability of any such occurrence diminishes from year to year. Five years ago, the demand for England was so irregular, that no preparation was made on the continent for meeting it; and when that demand occurred, this country profited thereby, and largely profited. Now, an opposite state of things exists. All Europe is engaged in growing grain for England, and the failure of crops in one place is compensated by large crops in others, tending to produce an uniform and constant stream towards a market which tends daily to diminish in its extent; while from day to day the extension of railroads through the grain-growing districts of Europe tends to increase the facility of reaching that market, in which the number of people to be fed is constantly diminishing. From day to day we are augmenting our foreign debt, *the interest on which absorbs twice the amount of our whole exports of food to Great Britain*; and from day to day our people are abandoning the furnaces and mills, the farms and the plantations of the old States; flying from each other, and producing increased necessity for new roads and new loans, with constantly diminishing power to pay either principal or interest; being precisely the course that led to the downfall, and ruin, and repudiation, of the period from 1836 to 1842; and such must speedily be the result of the operation of the tariff of 1846.

Among the objects had in view in the adoption of our present commercial system, was that of giving to the nation a higher stand among the communities of the earth; but the tendency to failure in this respect appears to be greater than in relation to any other. It is well known that the man who is heavily in debt lies always at the mercy of his creditors, and that if he would place himself in a situation to exercise influence over the movements of others, he must first place himself in a position to act freely and independently in relation to his own; but the tendency of the existing system is in precisely the opposite direction. Although consuming far less of all the commodities required for the convenience and comfort of the great mass of the people, the nation is gradually piling up a mass of indebtedness to foreign nations, the total amount of which cannot now be estimated at less than \$300,000,000, the existence of which places the country at any moment at the mercy of the capitalists of other countries; and in case of the occurrence of circumstances rendering necessary the preparation for war, or war itself, the government might be paralyzed in all its efforts to command the revenue for its maintenance, and the nation might, and probably will find itself compelled to submit to injury and insult, because of the operation of a policy that thus places it in the power of the subjects of other nations to affect its movements. To those who doubt the possibility of this we recommend an examination of the condition of the country in 1841-2, at the close of the last *British* free-trade period. It was the advice of the Father of his country, "in time of peace" to "prepare for war;" and it is at least worthy of consideration, whether that advice should not be followed, not in the creation of fleets or armies, but in strengthening the position of the country, so as to enable it at all times to prove to other nations that, while anxious for peace, it was always ready for war in support of its rights and in defense of its interests. Weakness invites aggression; and it may be feared that such will be the result of a policy under which foreigners acquire a daily increasing control over the movements of the nation. Great power and heavy indebtedness cannot coexist.

The revenue being dependent wholly on imports, any revulsion in Europe must be followed by a similar revulsion here, the effect of which must be greatly to diminish, if not to annihilate, the power to purchase abroad the

supplies now received in exchange for bonds and certificates of debt, while the demand for food is small, and the value of our other staples diminishes with every increase in the quantity for which we need a market abroad. It is within the recollection of all, that, but a few years since, so great was the diminution of revenue consequent upon a revulsion which has its origin in Europe, that it became necessary to send a special agent abroad to endeavor to negotiate a loan, and that he was every where unsuccessful. With the change of commercial policy that then took place, the prosperity of the nation increased so rapidly, that although the imports and revenue largely increased, the necessity for purchasing abroad on credit passed away, and the nation gradually recovered its position among the other nations of the world, fearless of future danger, because it was gradually diminishing its foreign debt; and we recommend it to the careful consideration of our readers, whether the *permanent* position of the nation would not be effectually established by a recurrence to the policy that, in the years from 1843 to 1847, enabled it so completely to reestablish its credit with the world.

Enjoying the advantages of free government, our duty to ourselves and to the world requires that we should adopt every measure tending to diffuse among other nations a sense of the advantages that must result from freedom. If we would acquire power over the modes of thought throughout the world, we must prove to other nations the advantage of our modes of thought and action. By showing that under our system the planter and the farmer acquire from year to year better markets; that the facility of acquiring machinery to be used in aid of labor increases with each succeeding year; that labor becomes more productive, and that the whole people are from year to year enabled better to clothe, to feed, and to educate themselves and their children; that commerce among ourselves increases, and with it commerce with the nations of the world; that our means of transportation increase, and that with that increase there is a daily diminishing tax upon the farmer and planter for the performance of the work of transportation; that equality among the States and among the people tends gradually to increase; that the interests of capitalist and laborer tend daily to be more and more in harmony with each other; and that with each such step the nation becomes more independent of the other nations of the earth, and more and more fitted to associate with them on terms of perfect equality, while more and more enabled to present to them advantages resulting from the maintenance of peace; the people of this country, and more especially the agricultural portion of them, must acquire a daily increasing power over the movements of the world, and a daily increasing power to require the maintenance of peace. Such was the tendency of the policy pursued from 1843 to 1847; but the reverse of that is certainly the tendency of the existing one.

FARMING AND FARM LANDS IN MINNESOTA.

To the Editors of the Plough, the Loom, and the Anvil:

My duties have interfered with my acknowledgment of your circular sooner. I am unwilling to refuse my contribution to a periodical of so much character as *The Plough, the Loom, and the Anvil*, as I feel assured that our country, although now requiring none of the artificial aids to make it yield great crops, may still profit much by the circulation of your journal.

The valley of the Mississippi—one to four miles wide—is subject to inundation, but, escaping this, the low lands are very rich and productive. The

bluffs rise to a height of 100 to 300 feet above the river; and it has been found by experience that the highest prairies contain the richest land. The depth of surface soil varies greatly—from 2 to 50 feet—and throughout that part of the country with which I am acquainted, lies immediately upon a rather coarse limestone. The inferior nature of this rock compels us to resort to Galena or St. Louis for plastering lime. This stratum varies from 4 to 50 feet in thickness, and lies on a blue slate of about 2 feet thick. This is succeeded by a fine sand-rock of chalky whiteness, which has been penetrated to the depth of 90 feet without getting through it. Water is found in it; but wells dug in it are apt to lose their water after a few years. This sand is found 150 miles below and about a mile north of St. Anthony's, but I have not heard of it elsewhere. A quantity of it has been taken to Cincinnati, where it was found valuable in the manufacture of glass. A most beautiful specimen, in a pitcher and powder-horn, has been returned to this place, which I think in brilliancy surpasses any thing I have ever seen.

As you proceed north up the Mississippi, the quantity of rich soil diminishes, and, after 40 or 50 miles, runs out into pine barrens.

The valley of the Minnesota or St. Peter's river, lately purchased by Government from the Indians, I believe to contain some of the most fertile land in the United States. The bottom lands are a deep loam, in most places 7 or 8 feet thick, lying on a rich clay. The uplands, (of easy access,) throughout their extent of hundreds of miles on each side of the river, equal any land that ever was ploughed. It would not be difficult, in any part of this district, for a farmer to find 1,000 acres of the best ploughing land where he might stand in the midst viewing the whole; and this in the immediate neighborhood of a sufficiency of timber and abundant hay meadows. For raising horses, horned cattle, and sheep, the country appears peculiarly fitted; for our very dry winters render all animals vigorous and healthy, and an experience of 30 years has shown no disease to which domestic animals are subject. The wonderful fertility, accompanied by the happiest combination of prairie, timber land, and water, renders it probable that Minnesota will forthwith yield produce for the supply of the whole lower valley of our great river. To these advantages, we may add that water-power is universally met with, and we may easily have manufactories to furnish our whole country.

I am not aware that we have any thing new in the way of breaking prairie. Four or five yoke of oxen are used on ploughs turning 18 to 22 inches. Some ploughs are arranged with wheels and a gauge, requiring only one man to drive and guide them. These, on quite even prairie, are the most economical. Others are in the common form, and require two men, but are the best where the land is uneven or filled with hazel-brush. From two to two and a half acres is an average day's work. The month of June has been invariably found the best time for breaking land.

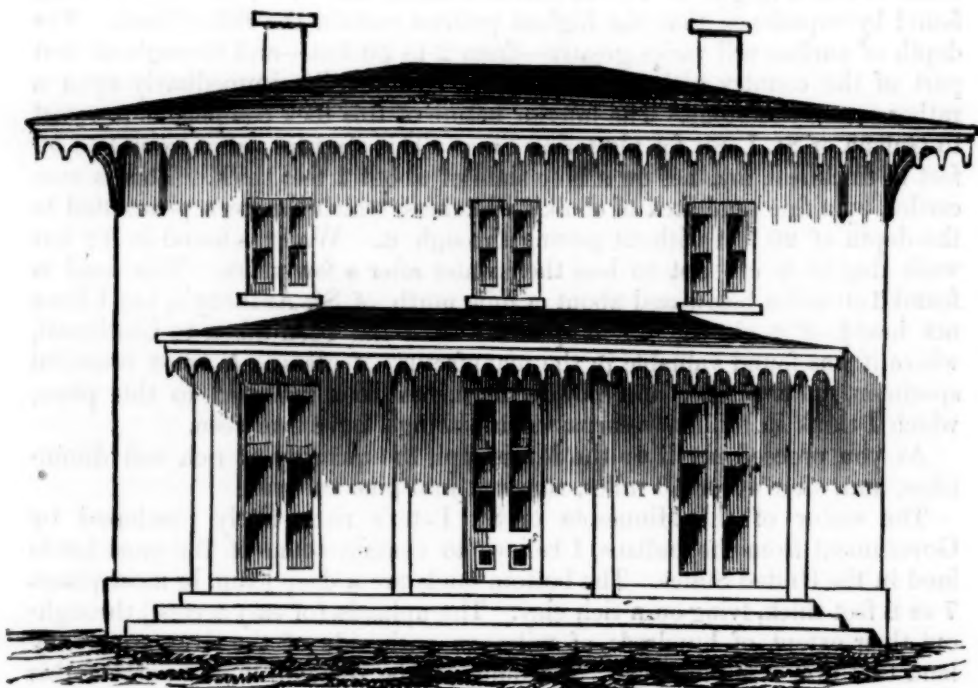
At present we need no potash or other salts as fertilizers, nor shall we for years to come.

I have thus made an opening with you, and hope to be able to send you something more interesting when our crops are thrashed and marketed.—
Your very obedient servant,

P. PRESCOTT.

Fort Snelling, Minnesota, Nov., 1851.

THE WROUGHT IRON WORKS OF THE UNITED STATES.—Capital invested, \$13,995,220; tons of pig metal consumed, 251,491; tons of blooms used, 33,344; tons of ore, 78,767; tons of mineral coal, 572,063; bushels of coke and charcoal, 14,510,838; value of raw material and fuel, \$9,518,100; hands employed, 12,975; tons of wrought iron made, 272,044; value of products, \$16,387,074.



COTTAGE DESIGNS.—No. II.

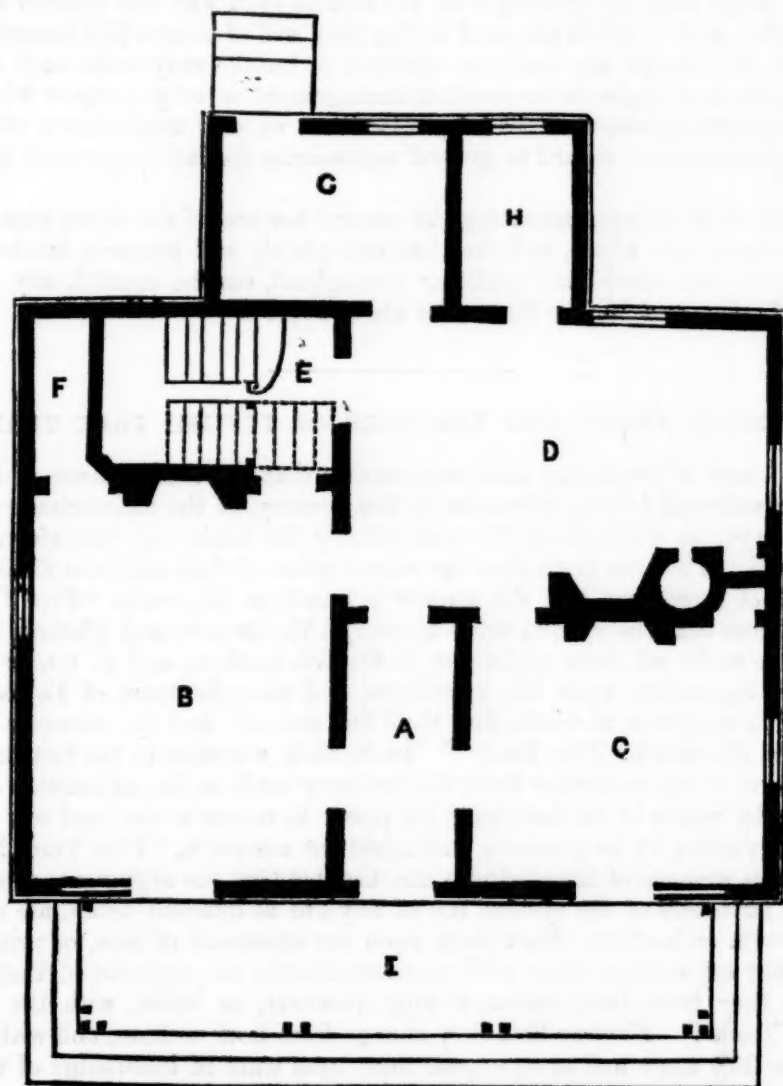
IN accordance with the plan proposed in our last number, we present our readers with a second cottage design, combining neatness, convenience, and economy, and particularly adapted to the wants of a small or moderate-sized family.

The desire, on the part of an individual of small means and limited income, to occupy a large and expensive dwelling, with all the accumulated expenditures for furniture, household service, &c., is an error into which too many fall, and one which is generally attended with a sacrifice of real comfort to the occupant, as well as a very unnecessary drain upon his resources. Much more real happiness and contentment are often found in the comfortable rural cottage home than the most splendid mansion or magnificent villa could impart, particularly if the owner is not in circumstances to support a style and equipage which would appropriately compare with it.

The above design is neat and chaste in appearance, presenting in its elevation and exterior arrangement something of the Oriental or Chinese style of architecture, while the interior plan is both convenient and pleasant. The main building is designed to be thirty-four by twenty-six feet, with a piazza or veranda in front, six feet deep. To the main building is attached an addition in the rear for a sink-room, pantry, &c., to be nine by seventeen feet.

The principal story should be ten feet in clear from the floor to the ceiling, and the chamber story eight feet. The parlor is thirteen by seventeen feet in size, the bed-room twelve by thirteen, and the kitchen thirteen by nineteen feet. In the latter, it will be perceived by the ground plan which we annex, is arranged on one side of the chimney, and connected therewith, a "country brick oven," a very convenient appendage to a rural home. It will also be seen that the kitchen D communicates with the front hall A, the parlor B, the

bed-room c, the stairway e, the sink-room g, and the pantry h. The parlor b also communicates with the front hall a, the kitchen d, the stairway e, and a closet f. For further convenience, there may be a door opening from the stairway into the sink-room, which would allow a communication from the parlor and the chambers to the sink-room and back-door without passing through the kitchen.



VIEW OF THE GROUND PLAN.

In the construction of a cottage of this description, a *heavy* frame is not required, as all necessary strength may be obtained by properly "bracing" and "budging" the building. The sides may be covered with well-seasoned boards one inch, or one and a quarter inch thick, grooved and tongued. If placed vertically and neatly battened, the covering will be better and more durable. If put on horizontally, the boards should not exceed four and a half inches in width, and be carefully laid with white lead paint in the joints, without battens. The former method, however, we prefer, as being more durable, and requiring less expense in repairs. The roof may be nearly flat, covered with matched boards, and tinned, or with canvas or light duck,

well painted with three coats of the "OHIO Fire and Weather-Proof Paint;"* or it may have more "pitch," and be shingled in the usual manner.

It will be perceived by the plan that the front parlor and bed-room windows extend to the floor, and instead of the usual manner of hanging, the sashes slide into the walls, and are supported on rollers inserted in the bottom. They are protected by outside, and, if desirable, inside blinds, which are hung in the usual manner, opening from the middle each way, the exterior blinds outwards; and if blinds are used inside, they will of course fold inwards.

From this design, any judicious architect or builder may make such trivial alterations or changes in its internal arrangement as may comport with the wishes or circumstances of the proprietor; but we very much doubt whether any improvement in regard to general convenience for family purposes can be made.

A very neat cottage, embracing the general features of the above plan, with a cellar under the whole, and the chambers plainly and properly finished, including outside blinds and painting throughout, can be erected, any where in the Eastern and Middle States, for about \$1,600.

HARMONY AMONG THE TEACHERS OF BRITISH FREE TRADE.

WE know of few things more remarkable than the total absence of knowledge manifested by the advocates, in this country, of the maintenance of the British system, which looks to monopolizing the trade and manufactures of the world. Prove to them that the consumption of cloth and iron diminishes instead of increasing, and the answer is found in the words "Free Trade." Show them that the system tends to compel the farmers and planters of the world to make all their exchanges in English markets, and to render them entirely dependent upon the merchants and manufacturers of England in regard to the prices at which they shall buy and sell, and the answer is again found in the words "Free Trade!" Invite their attention to the fact that the separation of the consumer from the producer tends to the exhaustion of the farmer, by reason of its destroying his power to return to the land any of the manure yielded by its products, and again the answer is, "Free Trade!"

To this absence of knowledge is due the fact that the arguments of no two of the advocates of the system, nor of any one at different times, are in harmony with each other. Meet them upon any statement of facts, or principles, and they are always ready with another, directly the opposite of that upon which they have been beaten, closing, however, as before, with the words "Free Trade!" *Proteus*-like, they change from hour to hour, and with every change they more and more expose their total want of knowledge of what it is that constitutes real freedom of trade. In illustration of these views, we now lay before our readers the following extract from one of the free-trade journals of the day, written shortly previous to the advent to our shores of Governor Kossuth:—

The movements of Kossuth in England, particularly in Manchester, must create consternation amidst the ranks of Protectionists on both sides of the Atlantic. The excitement produced by the free-trade speeches and demonstrations which have marked the progress of Kossuth must lead to important results. The death-knell of protection has been sounded, and, soon after Kossuth's arrival in this country, it will be literally anni-

* For sale by W. H. Starr, 67 Beekman street, New-York.

hilated. Political and commercial liberty must go hand in hand. Where one is, there must the other be also. Free trade has never yet been established in any great commercial country. The idea has gone forth, and as it advances will gain strength, and become more generally entertained. The principle exists. The theory is well understood; but we have not yet had a practical demonstration of the proposed system. We shall soon reach that point. Events which have taken place in England within the past thirty days have given a great impetus to this principle, and it must ultimately be adopted in the most liberal sense. The probability is, that we shall hear no more from the manufacturing interests on this side of the Atlantic about protection. We doubt if there is ever another demonstration made in Congress relative to a tariff giving as much protection as the one now in operation. Manufactures in the United States will increase fast enough without any tariff at all. With open ports and a complete abolition of all custom-houses, the manufacturing interest would prosper as much as it should to insure a healthy, permanent progress. *Within the past four years, the manufacturers of the United States, in the aggregate, have made more money in the same length of time than under any tariff we have ever had. Protection creates great competition, and, of course, reduces prices; but the difficulty is, that it reduces prices so much that most of the manufacturers fail, and all those engaged are ruined. The result is, that consumers for a time get certain articles cheap, but most of the time have to pay high prices. After the manufacturers have broken down, and the business at home is completely prostrated, we have to look abroad for our supplies, and it is then that the high duty becomes so onerous. Then the consumer feels the evils of protection. Manufactures in all countries must be built up gradually to become permanent, and the only way to build them up firmly is to withdraw all protection. Those that are established under a free-trade system, have nothing to fear from any change in the policy of the Government; but those depending upon protection for support are never safe. Subject to certain influences by every change in the political affairs of the country, they know not when they may be completely prostrated. There is nothing like free trade in any thing connected with finance and commerce. It is the only sure foundation upon which to build a commercial system that will not only be permanent, but productive of the greatest good to the greatest number.—New-York Herald.*

It is probable that some of our readers have preserved the report of the late Secretary, Mr. Walker; and if so, we would invite them to an examination of his arguments in support of the maintenance of the British system, and a comparison of them with those here given, with a view to see that they differ in every point. That done, we would ask them to compare the two with the facts, and satisfy themselves that the ex-Secretary's predictions as to the future have in no instance been realized, and that the facts, as here given, are in direct opposition to the facts as they exist.

Mr. Walker assured the people that they were being taxed to enable the manufacturers to make large fortunes, and thus create an aristocracy of wealth. The present writer, on the contrary, assures his readers that, in the last four years, the manufacturers "have made more money in the same time than under any other tariff." It is not for us to reconcile the views of these learned Thebans, nor to reconcile those of the *Herald* with the fact that these *very prosperous* manufacturers now convert into cloth one fourth less cotton and sheep's wool than they did four years since, and have been from year to year diminishing in number by reason of bankruptcy, resulting from the fact that, diminished as has been the production of cloth, the demand had diminished so much more rapidly, that it was constantly being sold at less than the cost of production. Neither is it for us to reconcile this statement with the further fact that the *very prosperous* owners of furnaces and rolling mills have, to a great extent, been sold out by the sheriff; and that the manufacture of iron, which trebled in four years, has diminished, under the tariff of 1846, to the extent of fifty per cent. If the manufacturers have made money, where are the evidences that such has been the case? Shall they be sought in mills and furnaces now abandoned, in which have been invested many millions of dollars, now totally unproductive to their owners? If they had made money,

would they not be extending their works, and building new mills and new furnaces, instead of abandoning old ones?

Mr. Walker assured the nation that protection gave to the home producers a monopoly of the domestic trade, and enabled them to add to the true price of the article the whole amount of duty; but the *Herald* assures its readers that "*protection creates great competition, and, of course, reduces prices,*" as it certainly does. The result, as we are here assured, is, that "*for a time consumers get certain articles cheap,*" that is, during the continuance of protection; but prices are then, we are assured, reduced so much that producers are ruined. With this, however, the manufacturers are quite content. They say, Let us have domestic competition to contend with, and we will reduce the price so low as to render unnecessary the importation of cloth and iron, and then the people will be able to consume thrice as much as they do now, and be better fed, better clothed, better lodged, and better educated than they can now afford to be. In reply, Mr. Walker says: "My friend of the *Herald* is quite wrong: protection does not make goods cheap; it makes them dear:" and to reduce the price, he takes off the duty; and then it is that prices rise, as is here shown in the prices of lead under the tariffs of 1842 and 1846:—

Tariff of 1842.		Tariff of 1846.	
Duty, \$3 per 100 lbs.		Duty, 60 cents per 100 lbs.	
Receipts at New-Orleans.	Prices.	Receipts at New-Orleans.	Prices.
1843, 571,000 pigs.	\$2 37	1847, 659,000 pigs.	\$3 00
1844, 639,000 pigs.	2 82	1848, 606,000 pigs.	3 50
1845, 732,000 pigs.	3 00	1849, 518,000 pigs.	3 62
1846, 785,000 pigs.	2 90	1850, 415,000 pigs.	4 05
		1851, 325,000 pigs.	4 07

Protection increases competition and diminishes prices; and its effect is to throw upon the foreign producer the payment of the duty, as is shown by the fact that, under the tariff of 1842, lead was sold at less than the amount of the duty. British free trade diminishes competition and raises prices, and throws upon the domestic consumer the payment of the duty, as is shown by the fact that lead now sells at a price as much higher than it did in 1846 as the whole amount of the duty, and the invoice price of foreign lead is now greater than was the domestic price in 1845 and 1846.

We are here promised an abolition of all custom-houses; and yet another free-trade paper, the *Journal of Commerce*, assures its readers that the present tariff is the best we have ever had—better even than that of 1841–2, which repudiated the idea of protection, and gave a uniform revenue duty of twenty per cent. It is really to be regretted that these gentlemen could not for once understand themselves, and let us know what it is they would prefer, and what precisely is the goal to be attained. If it is increased competition, we are here assured that protection gives it. If it is low prices, we are here assured that they also are a consequence of protection; and yet the same writer assures us that the way to a healthy permanent progress is to abolish all custom-houses and all protection even for revenue, and thus secure to Great Britain for ever the power to compel our farmers and our planters—like those of Canada—to make all their exchanges in that single market, filled with men whose existence depends upon buying at the lowest price from the farmer and planter, and selling to them at the highest one; when it needs but an effort on the part of the farmer and planter to bring the consumer to their sides, and to make their exchanges at home, according to the doctrines of ADAM SMITH. It is much to be regretted that the learned men who undertake to teach political economy could not be induced to study the A B C of the science in the "Wealth of Nations."

THE TRUE ROAD TO PERFECT FREEDOM OF TRADE.

IN our December number, we called the attention of our readers to the very striking fact, that, in the effort to obtain direct trade with foreign countries, our Southern friends looked only to those countries which had established protection, neglecting altogether those which maintained free trade with England. They desired trade with Belgium and Germany, the favored lands of high protection; and they cared nothing for trade with Portugal or Turkey, always subject to British free trade. The reason for this is simple. The people who are protected are enabled to maintain trade, while those who are not protected are unable to maintain it. The trade of Ireland and India is worthless, and it diminishes from year to year; while that of Belgium and Germany is great, and tends to increase from year to year.

We have now before us a statement of the exports of Great Britain, by which it appears that the protected Germans and Belgians, and the half-protected people of this Union, are customers to that country for no less than twenty-seven millions of pounds, while the rest of the world takes from her but thirty-four millions; and thus a population of less than fifty millions of protected men makes almost as large a trade as one of hundreds of millions of unprotected men.

The exports to Germany have increased rapidly since the adoption of protection in 1835, because the German people have become better able to buy, and to pay for what they need; but no such change has taken place in unprotected countries. The whole export to Turkey, Egypt, and the East, is but £2,810,000, and that to Portugal but £1,029,000, while the hundred millions that occupy the British colonies take but £18,628,000, of which no inconsiderable portion is sent with a view to smuggling into Spain, China, and other countries; and all the measures of the British Government are directed to the protection of this smuggling trade, as was recently shown by us in an extract from the *Chinese Mail*, an English paper published at Hong Kong.

The British system of trade looks to the exhaustion of the people who cultivate the earth; and therefore it is that trade diminishes in amount wherever British free trade is permitted to exist. Protection looks to the enrichment of those who cultivate the earth, because it looks to placing the consumer by the side of the producer, enabling the latter to return to the soil the refuse of its products; and therefore it is that trade increases in amount wherever it is established. The true road to perfect freedom of trade lies in the direction of the largest trade; and our readers will readily see that the road to a large trade lies in the direction of enriching the land and its owner, instead of impoverishing both.

THE TOBACCO CROP IN ONONDAGA CO., N. Y.

IN consequence of the excitement which has prevailed among the farmers of Onondaga this season in relation to the astounding profits proceeding from the raising of tobacco, many of them went into the business of producing young plants in the spring pretty extensively, and the results in many instances, I am happy to state, have turned out favorably; though, notwithstanding the profitableness of the cultivation of the weed, I must unhesitatingly acknowledge that the tobacco fever (for it cannot in reality be called any thing else) has prevailed to an unwarrantable extent, and for the palpable reason that many embarked in the cultivation of the weed when, in fact, they were

almost perfectly unacquainted with the proper mode of cultivating it. For instance, here is neighbor R., who engaged in cultivating the plant in a heedless and unintelligent manner, and in consequence has had his tobacco injured by early frosts. There is neighbor B. also, who did not wish to gain any information from books and agricultural journals in reference to managing the weed, has been unfortunate in securing and curing his tobacco—all attributable to gross heedlessness and imprudence, which may properly be ascribed to selfish and ignorant views in regard to gaining knowledge from others. In fact, some farmers among us did not put up their tobacco-houses until the frost had materially injured their plants, though they have managed in the end to save themselves and make a pretty fair profit out of their crops.

As to the number of acres of tobacco which have been raised in Onondaga this season, it would be a pretty hard matter to state; but suffice it to say, that almost every town in the county has raised more or less of the weed; and perhaps it will be well to state that those who embarked in cultivating it in 1850 went into its cultivation more extensively this season. Tobacconists have offered up liberal prices for the plant on the ground; and from pretty authentic sources I learn that some farmers have realized a profit of from \$160 to \$230 per acre. Encouraged by such returns, and by good crops, as a general thing, I presume next season will show an increase of the weed of one half over this year.

Not only have the people gone into the business of raising tobacco largely in this county, but fully as extensively in many of the adjacent counties. Madison, Oneida, Cayuga, and Cortland, I presume, will turn out many thousand pounds, or at least enough to keep the smoking and chewing community puffing and snuffing for days to come.

The variety which is cultivated among us is the "Connecticut Long Leaf." It does well, and is perhaps preferable to any other kind for the northern latitudes.

W. TAPPEN.

Baldwinsville, N. Y., Dec., 1851.

THE APPLICATION OF SALT AS A MANURE.

THE application of common salt as a fertilizer has been partially understood and practised by a few of our agriculturists, but we very much doubt whether the full benefits of this substance have been derived by those even who have made the experiment, and in some degree realized the advantage it affords. It may be applied advantageously directly to the soil, or it may be mixed with the dung-heap. It is found beneficial to pasture as well as root crops, sweetening vegetation and rendering it more wholesome. It attracts the humid vapors and repels frost, thus assisting in keeping the land moist in dry, and warm in cold weather. Salt renders all the ammoniacal compounds less volatile, and helps to prepare the food of the plant for vegetable aliment. When applied plentifully to the manure-heap, it destroys all vermin, and the germs of life in the seeds of weeds and noxious plants are by its effects entirely exterminated.

In making use of salt in the manure-heap or compost-bed, but little should be used if fermentation is desired, as in large quantities it retards, and will frequently entirely suspend it; but a short time previous to the application of the manure to the land, salt may be freely used with great service to the crops. Mixed with lime and its compounds, it undergoes decomposition, producing soda or its combinations with carbonic acid, which is a powerful digester and feeder, and forms muriate of lime, which has the strongest attraction for moisture of almost any known substance. With gypsum, it will supply soda and

sulphuric acid cheaper than any other material, and is a very good safeguard against blast, mildew, and disease in grain and vegetables.

When salt is applied to the soil at the rate of about ten bushels to an acre of either grass or vegetables, it renders the product more nutritious, and generally increases the yield about one fifth. The wheat crop is also increased by its use, from four to seven bushels per acre. For asparagus, or sea-kale, it may be used in much larger proportions, using from two to three pounds per square yard, forking it in early in the spring. This application renders the product much more palatable and tender, and destroys all weeds and noxious vermin, rendering its culture more easy, and its growth more vigorous and rapid. It is also said to bring crops forward nearly ten days earlier than when planted without its application.

As a stimulant to vegetable substances, salt has been long favorably known in England, and various experiments have been made confirming this truth. Dr. Priestley added to vials each containing an ounce and a half of water, various proportions of common salt, from one to twelve grains, and in the solutions placed various sprigs of mint and other vegetables. In those solutions which contained more than twelve grains, the plants died immediately, and the others died in their order, except that which contained three grains of salt, which seemed to grow as well as plants growing in simple water. It was remarkable, however, that this plant, as well as all those that died in the strongest solutions, seemed to flourish *at first* more than those which were growing in simple water, and that that which had three grains of salt, and that which had one grain only, continued to live after the plants in simple water were dead. (*Nat. Philos.*, vol. i., p. 106.) That vegetable substances are capable of being stimulated by chemical solutions, is well known. A solution of chlorine in water will make certain seeds vegetate which would otherwise rot in the earth; and a mixture of camphor, &c., has been found to be very beneficial in restoring vitality to cuttings of various exotics too long delayed in their passage.

Salt, it should be remembered, *rarely causes the wheat plant to grow larger or taller*, but it fills up the ear better, and brings the weaker plants forward. Mr. Sinclair says that "salt appears to lessen the produce of straw, and increase the weight of grain." I have never been able, says Johnson, in my experiments, nor in any I have witnessed, (with salt alone,) to observe any increased quantity of straw, even in cases where there was an increased produce, by means of salt, of six bushels of wheat per acre. The salt should be applied some time before sowing the seed, not less than ten, and not more than twenty bushels per acre. In my own experiments upon a light gravelly soil, at Great Totham, in Essex, the use of this quantity of salt per acre (in 1819) produced an increase of five and a half bushels per acre. The following statement of the result of some trials in 1820, on a light and gravelly soil, will show how important may be the result to the country at large by its judicious application. I regret that incessant employment of a very different nature has hitherto prevented my continuing these experiments.

Produce per acre.				Bushels.	lbs.
No. 1.	Soil without any manure for four years,	-	-	13	26
2.	Soil manured with stable-dung to the previous crop, (potatoes,)	-	-	26	52
3.	Soil with 5 bushels of salt per acre, and no other manure for four years,	-	-	26	12

The testimony of an Essex farmer corroborates these results. "The soil," says Mr. James Challis, of Panfield, "which is of rather a loose, hollow descrip-

tion, had a dressing of salt in November, after the wheat was sown, about fourteen or fifteen bushels per acre: it produced at the rate of six bushels per acre more than that which was not dressed, and it is better in quality."

It is a custom in most counties of England, to apply salt and water as a steep to prevent the ravages of the disease in wheat called smut; the value of this is known to almost every farmer. Recent experiments have suggested that it may even be of use, when employed in larger quantities, as a preventive of mildew, the most dreadful of the numerous diseases to which the cultivated grasses are exposed. The experiments of the late Rev. E. Cartwright strongly evidence that when salt and water are sprinkled with a brush upon diseased plants, it effects a complete cure, even in apparently the most desperate cases. "The proportion, one pound to a gallon of water, laid on with a plasterer's brush, the operator making his casts as when sowing corn, is instant death to the fungus." The time and expense are trifling. It appeared, in the course of some inquiries made by the Board of Agriculture, that a Cornish farmer, Mr. Sickler, and also the Rev. R. Hoblin, were accustomed to employ refuse salt as a manure, and that their crops were never infected with rust or blight.

Experiments in England demonstrate the efficacy of salt on barley and oats. In 1820, on a good alluvial soil, at Heybridge, in Essex, in a field of barley, the results of two experiments were:

	Bushels.
1. Soil dressed with 6 bushels of salt per acre, and 20 loads of earth and stable-dung, at turnip-time, producing per acre,	65
2. Soil dressed with 20 loads of dung and earth, - - -	60

In the same year, at Sproughton, in Suffolk, on a sandy barley soil, belonging to Mr. Ransome:

	Bushels of barley.
1. Soil without any manure produced per acre, - - -	30
2. Soil dressed with 16 bushels of salt per acre in March, -	51

The following Table contains the results of fourteen experiments, made by the late Mr. George Sinclair, at Woburn, on the uses of Salt to the barley crop. The soil had, the previous year, carried a crop of turnips, and was composed of three fourths silicious sand:

KIND OF MANURE AND MODE OF APPLYING IT.	Quant. per acre.		Produce.	
	Bushels of salt.	Bushels of lime.	Bushels.	Wt. per bush., lbs.
BARLEY.				
Soil without manure of any kind, - - -	—	—	12	43½
Salt sown with the seed, - - - -	55	—	20	43½
Salt sown with the seed, - - - -	5½	—	20	42½
Salt applied before sowing, - - - -	33	—	28½	44½
Salt applied before sowing, - - - -	11	—	28¾	43
Salt applied before sowing, - - - -	5½	—	28½	43
Lime and salt applied before sowing, - - -	33	60	9	42½
Lime and salt applied before sowing, - - -	11	60	22	42½
Lime and salt before sowing, - - - -	16½	30	13½	43
Lime mixed and sown with the seed, - - -	—	60	18½	43¾
Lime mixed with soil previous to sowing, - - -	—	60	10¾	43½
OATS.				
Sown without any manure, - - - -	—	—	28¾	33
Salt with the seed, - - - -	44	—	17½	30½
Salt mixed with the soil, - - - -	44	—	27	27

The following Table contains the results of the experiments made at Woburn, by the late Mr. George Sinclair, with his usual scientific accuracy. The farmer's attention is invited to this table, as containing a mass of valuable information. The soil on which these experiments were made was sandy, and the plots each contained thirty-six square feet. The Talavera wheat was drilled into the soil November 5th, and reaped Aug. 2d.

KIND OF MANURE, AND MODE OF APPLYING IT.	Manures; omitting fractions, quantity per acre.				Produce.	
	Dung in tons.	Salt in bushels.	Lime in bushels.	Oil cake in bushels.	Bushels.	Weight of a bushel.
Spit manure applied previous to sowing the seed,....	45	..	..	..	49	57 $\frac{3}{4}$
Salt and spit manure dug in; salt mixed with seed,..	45	44	..	..	75	58
Salt mixed with soil four inches deep, before sowing, ..	..	44	..	..	91	59
Salt mixed with soil four inches deep, before sowing, ..	..	5 $\frac{1}{2}$	..	..	77	59
Salt sown with seed,.....	..	5 $\frac{1}{2}$	..	..	73	57
Salt combined with manure, dug in four inches deep, 45	45	5 $\frac{1}{2}$	..	..	75	52 $\frac{1}{2}$
Salt and manure; salt sown with seed, manure dug in, 45	45	5 $\frac{1}{2}$	..	..	95	59
Salt and manure; salt applied to the surface,	45	5 $\frac{1}{2}$	..	..	82	57 $\frac{1}{2}$
Salt simply applied to the surface,.....	..	5 $\frac{1}{2}$	..	..	60	55
Salt and manure; salt applied to the surface,	45	44	..	..	55	53 $\frac{3}{4}$
Salt simply applied to the surface,.....	..	44	..	..	77	56
Salt and lime mixed, and applied with the seed, ....	..	5 $\frac{1}{2}$	120	..	66	56 $\frac{1}{2}$
Salt and lime mixed, and applied before sowing, ....	..	5 $\frac{1}{2}$	120	..	68	56 $\frac{3}{4}$
Salt and lime mixed, and applied on the surface,....	..	5 $\frac{1}{2}$	120	..	64	56
Lime applied with the seed, .....	..	..	120	..	53	52 $\frac{1}{2}$
Lime applied to the surface, .....	..	..	120	..	57	54 $\frac{1}{2}$
Salt, lime, and dung mixed, and applied as manure,..	90	5 $\frac{1}{2}$	120	..	62	56 $\frac{1}{2}$
Long dung dug in as manure,.....	41	..	..	..	71	56 $\frac{3}{4}$
Salt and long dung mixed, and applied as manure, ..	41	22	..	..	71	56
Lime and long dung mixed, and applied as manure,..	41	..	120	..	54	57
Salt and long dung mixed, and applied as manure, ..	41	44	..	..	..	56
Oil cake mixed, and applied with the seed, .....	..	..	..	5 $\frac{1}{2}$	48	56
Oil cake applied as common manure,.....	..	..	..	5 $\frac{1}{2}$	73	60
Oil cake and lime applied as common manure,.....	..	..	120	5 $\frac{1}{2}$	74 $\frac{1}{2}$	56 $\frac{3}{4}$
Salt and oil cake mixed, and sown with the seed,....	..	5 $\frac{1}{2}$	..	5 $\frac{1}{2}$	60 $\frac{1}{2}$	2
Salt and oil cake mixed, and applied as manure, ....	..	5 $\frac{1}{2}$	..	5 $\frac{1}{2}$	74 $\frac{1}{2}$	58
Salt, oil cake, and manure, applied as manure,	90	5 $\frac{1}{2}$	..	5 $\frac{1}{2}$	74 $\frac{1}{2}$	58
Salt, oil cake, and manure; the salt and oil cake sown with the seed, manure previously dug in,.....	90	5 $\frac{1}{2}$	120	5 $\frac{1}{2}$	55 $\frac{1}{2}$	55 $\frac{1}{2}$
Salt, oil cake, and lime applied as manure. ....	..	5 $\frac{1}{2}$	120	5 $\frac{1}{2}$	71	51 $\frac{1}{2}$
Salt, oil cake, and lime sown with the seed, .....	..	5 $\frac{1}{2}$	120	5 $\frac{1}{2}$	55 $\frac{1}{2}$	55 $\frac{1}{2}$
Salt, oil cake, and lime applied to the surface, .....	..	5 $\frac{1}{2}$	..	5 $\frac{1}{2}$	66	58
Salt applied to the soil in the preceding spring, .....	..	62	..	..	44	57 $\frac{1}{2}$
Salt applied to the soil in the preceding spring, .....	..	31	..	..	26 $\frac{1}{2}$	47 $\frac{1}{2}$

In these experiments upon oats, the quantity of salt applied was evidently too great. Mr. Legrand states that, in his experiments upon barley, it gradually advanced in its effects to sixteen bushels, and as gradually diminished to forty bushels, when vegetation was stopped.

As a Manure for Grass-Land, Meadows, &c., salt has been used in all parts of England, with varying success. It always, however, sweetens the herbage. It has been employed at the rate of 6 to 16 bushels per acre, and where the primary object has been the destruction of the old turf, even 30 to 40 bushels have been successfully employed on the same extent of land. It has the effect of completely preventing worm-casts on lawns, &c.

In a letter from Mr. Collins, of Kenton, Devonshire, 1826, he says: "One of my neighbors writes me, 'in using salt as a manure on grass land, I have found the salted portions not to be affected by severe frosty nights, when every

blade of grass on the unsalted portions has been in a frozen state. I observe, too, that it is destructive to every kind of grub-worm; and I am convinced, where it has been used with judgment, that it has not failed.' Another intelligent neighbor," continues Mr. Collins, "whose farm is almost entirely a light black sand, writes, 'I have found salt to answer my most sanguine expectations for barley, oats, potatoes, and turnips, both as to the increased quantity and improved quality of the crops, of which I can now give ocular demonstration: my barley and oats, which used to yield me only 15 to 20 bushels per acre, now yield from 40 to 50. My wheat is certainly much improved in quality, but I expected more in quantity. I have 35 bushels of wheat from an acre dressed with 10 bushels of salt; and from the same field last year, after the same quantity of salt, 140 bags of potatoes per acre. This year again, dressed with 10 bushels of salt, I have not more than 20 bushels of wheat per acre, but the quality very superior indeed, and the root of clover in it very fine and luxuriant. In every field I have salted, I find the grass very much superior to any produced before the use of salt.' I have since, adds Mr. Collins, gone over his farm, and am astonished at the verdant pasturage, in what used to be coarse and rushy meadows. In this arable land, he never got more than 10 bushels of wheat per acre until he used salt; so that this is also a decided improvement."

Some further remarks on this topic will form the subject of another article.

RESOURCES OF ILLINOIS.

"As our Illinois beds are worked deeper, they will furnish an article as good, and ere long better than the Pennsylvania coal. Adjoining the *great unworked colliery*, which stretches across our State from central Iowa to northern Kentucky, manufacturing cities will soon arise as busy as Pittsburg, perhaps as smoky. And coal, more and more valuable for manufacturing purposes, for solidity, density, heat-giving, &c., will be brought up as the progress of our North-western manufacturing towns makes a demand for it."—*Galena Daily Advertiser*.

Fuel being so abundant in the West, and fuel being the chief ingredient of iron, it would seem extraordinary that Illinois should now look abroad to borrow money to be used in the purchase of that commodity, when she has in her possession so much *coal that she cannot sell, ore that she cannot sell, and food that she cannot sell*—the three being the commodities of which iron is composed. It is anticipated, however, that at some future time this "great unworked colliery" will be worked, and that the progress of "North-western manufacturing towns will make a demand for it;" but the prospect appears to us at present to be small, as from every part of the West we receive accounts similar to that contained in the following extract in reference to the iron trade of Ohio:—

"HOME FACTS.—MORE RESULTS OF THE BRITISH TARIFF OF 1846.—The Youngstown Iron Company, we learn, has been obliged to close business. It was a joint-stock company, composed of citizens of Youngstown, with a capital stock of about forty thousand dollars, and has been in operation five years. The Company has never made any dividend during its existence, and we are assured that the stockholders will lose near *thirty thousand dollars*, including the interest on the capital invested. The works were situated near a fine coal bank, with iron ore in abundance near at hand, and every facility for doing a successful business. And what has been the cause of the failure? The answer is plain, and the same cause has closed over one half the iron works in Pennsylvania. It is this: The reduction of the duty on imported iron, by the tariff of 1846, was such that it enables the British monopolists to flood this country with their iron, and deprive our home establishments of a market for their products; and this Company has

been obliged to keep large amounts of iron on hand, or sell at ruinous prices and at great hazard of loss. Had the efficient protection of the iron interest afforded by the tariff of 1842 been retained, this Company might now be doing a prosperous business, while other works of the kind, owing to the great facilities afforded in this section of the State, would have sprung into existence, and thus furnished a market at the farmer's door for his surplus produce. The citizens of Youngstown and the farming community around will feel the loss sustained by the closing of this establishment, as well as the workmen engaged in it, who are now turned out of employment and obliged to retreat to some other means of obtaining subsistence. Thus we go on prospering (?) under the British tariff of 1846, which was to work out the salvation of the country. We trust the people will ere long see that their true interests lie in protection, and not be again deceived by those who gained power by the cry of 'Polk, Dallas, and the Tariff of 1842.'

Such being the state of affairs with regard to the trade in IRON, we may now look to the trade in LEAD, a commodity in which Illinois is so rich that she could readily supply the world, and promised so to do while protection was being afforded to its producers; and here we are fortunately enabled to give the precise facts in reference both to the trade by New-Orleans and that by the New-York canals, showing the whole amount of exports under the tariffs of 1842 and 1846.

RECEIPTS AT NEW-ORLEANS.

Tariff of 1842.				Tariff of 1846.			
			Pigs.				Pigs.
1843,	-	-	571,000	1847,	-	-	659,000
1844,	-	-	639,000	1848,	-	-	606,000
1845,	-	-	732,000	1849,	-	-	518,000
1846,	-	-	785,000	1850,	-	-	415,000
Increase, FORTY PER CENT.				1851,	-	-	325,000
				Diminution, SIXTY PER CENT.			

RECEIPTS ON THE HUDSON.

							Pounds.
1845,	-	-	-	-	-	-	223,500
1846,	-	-	-	-	-	-	489,800
1847,	-	-	-	-	-	-	482,000
1848,	-	-	-	-	-	-	80,000
1849,	-	-	-	-	-	-	11,167
1850,	-	-	-	-	-	-	88,000
1851,	-	-	-	-	-	-	Returns not yet made up.

Diminution under the tariff of 1846, EIGHTY PER CENT.

Believing that it may interest our friends in Illinois to understand by whom it is that the domestic demand for lead is now being supplied, we give a statement of imports under the tariff of 1846, as follows:—

		Pounds.	Value.
1847-8,	-	324,905	\$6,288
1848-9,	-	2,684,700	\$85,367
1849-50,	-	36,997,751	\$1,182,597
1850-51,	-	43,000,000	\$1,500,000

It must undoubtedly be gratifying to the owners of mineral lands to know that the market is being thus supplied by the people of Europe, even if their own mines remain unwrought; and to the owners of the *great unworked colliery* to know that the fuel of Europe is in increased demand; and to the growers of food in Illinois to know that, even if they have to store their own wheat for want of demand, the demand for that of Europe, in the form of lead, is rapidly growing—but how all these things tend to produce great manufacturing towns and villages in the West and North-west, we are quite unable to see. We should be glad if the Galena paper from which we quote would republish

this view of the working of the tariff of 1846, and explain how it is that they are to *commence* the work of making cloth, if they cannot *continue* the making of lead; and how it is that the farmers of Illinois are being benefited by the import of foreign labor and food, in the form of lead and iron, while fuel and ore so much abound among themselves.

MANUFACTURES AT THE SOUTH.

THERE is a fact connected with the history of manufactures that has its uses, whether we regard it as a matter of industrial enterprise or political speculation. Nations, like individuals, are not unfrequently compelled to serve apprenticeships, and we have an illustration in the history of those countries which have become wealthy and independent by their manufactures.

In regard to this subject, the *Dry Goods Reporter* of this city refers to the time when England was in a condition of vassalage to Holland and the Netherlands, in respect to this most important feature of her industry and greatness. The markets of London were filled with "iron, lumber, and leather, ready manufactured. The English grew food for the Dutch, and the Dutch ate it; wool for the Dutch, and the Dutch wove it." But this condition lasted only long enough for England to become as thoroughly acquainted with manufacturing as her taskmaster was; when, throwing off the shackles which made her dependent, that imperial system of British manufactures was established which has reared an empire the most magnificent in wealth and power the world has ever seen.

America, in her colonial condition, was to Great Britain what Great Britain had been to the German States. The House of Commons so considered it, when they declared "that the erecting of manufactories in the colonies tended to lessen their dependence upon the mother country." It is well known to every one at all conversant with the early history of his country, that it was only after our political independence was achieved that we turned our attention to profitable manufactures. And no lover of his country can ever forget, that from the year 1807 to 1815, during the embargo, non-intercourse act, and the war, dates our industrial independence of Great Britain; and that those very acts gave an impetus to manufactures, trade, and business, which were, beyond precedent, profitable.

The editor makes the application of this policy to our brethren at the South; at the same time disclaiming any intention by the comparison to excite sectional jealousy, or persuade the South that she has been in a condition of degrading vassalage to the North. He only wishes the South to feel that the term of her apprenticeship has expired, and would desire to impress upon the minds of her people the conviction that the advantages which they possess over the North for the manufacture of cheap and coarse goods (for to manufacture the finer qualities will require more experience and capital than they now possess) are many and important. Cheap living, low wages, cheap cotton, coal, and iron, constitute the great elements of success in the introduction and successful prosecution of cotton manufacture. No country in the world possesses these elements in a degree equal to the Southern and South-western States. Heretofore the capital and industry of this large section of the country have been almost entirely devoted to agricultural pursuits. By diversifying their labor, in the manner we have proposed, they insure their independence both of England and the North, while their labor, thus diversified, is made more profitable to themselves. The cotton is ready at their doors, and costs

them one cent per pound less than it does the Northern manufacturer. *The cost of transportation from the field to some Southern port, thence to Northern factories, the cost of insurance, payment of agencies, profits to manufacturers, and cost of retransportation back in the form of cloth*; all these are very important items, which go to swell the difference in the profits which the Northern and Southern manufacturer receive.

Nor are we without hope that the interest which has been excited on this subject will not be profitless. Already it is estimated that Georgia has in operation 40 cotton mills, using 80,000 spindles, and consuming 45,000 bales of cotton annually; in Tennessee there are 30 factories, and 36,000 spindles; in South Carolina there are 16 factories, 36,500 spindles, and 700 looms, consuming 15,000 bales of cotton; Alabama has 14 factories, 12,580 spindles, and 300 looms, consuming 9,500 bales of cotton. Thus in four States alone there are 98 factories, besides those in process of building, working 140,000 spindles, consuming probably 75,000 bales of cotton annually; and if they go on increasing for the next five years as they have for the past five, we may safely calculate on some 200 cotton mills in operation in the Southern States, consuming annually over 200,000 bales of cotton, and giving employment to some thirty or forty thousand operatives.

Thus the work has already commenced. Southern planters have the monopoly of this great staple. They will not hereafter be so entirely at the mercy of English or Northern purchasers. They can manufacture that description of goods mostly in demand by the planters themselves, such as osnaburgs, sheetings, yarns, jeans, and linseys, cheaper by far than their competitors. They can lay the foundation for future wealth and power as Great Britain did. They will add both to their commercial and political power. They will encourage the immigration of an industrious, hardy, and enterprising population. By this increase of population and of wealth, the Southern States will be enabled to bind themselves together by a net-work of railroads. They can perfect their internal improvements, increase the facilities of intercommunication, develop their boundless resources, and become what they long since should have been, among the richest, most active and powerful States of the Union.

"COAT OF ARMS" FOR THE STATE OF ALABAMA.

A DESIGN for a new "coat of arms" has been reported by the Alabama Legislature, and is thus described in the *Mobile Advertiser*:—

"A SHIELD QUARTERED.—In the centre, on a shield, a 'waterfall,' in proper colors.

"In the dexter chief, a 'branch of cotton,' in proper colors, on a gold field.

"In the sinister chief, 'emblems of mechanics, machinery, and manufactures,' in gold, on a red field.

"In the dexter base, 'emblems of commerce,' in gold, on a blue ground.

"In the sinister base, an 'ear of corn in the husk,' in gold, on a green ground.

"These represent the resources of the State; its water-power, its agricultural importance, represented by its two great staples, cotton and corn; its commercial facilities, and its capabilities in a mechanical and manufacturing point of view; these truly indicate wealth, a component part, but not the whole of *what composes* the greatness of a State.

"That which is wanting is supplied by the crest, which denotes *wisdom and strength*. A 'mailed arm, holding a sword barwise,' the emblems of *strength and power*, encircled by a 'serpent,' the emblem of *wisdom and prudence*.

"The *whole* 'arms' suggest the motto, '*These make us Great.*' Or, in other words, that the internal resources of the State, when developed and applied by the strength and

power of the State, governed by wisdom and prudence, constitute the essentials of a nation's greatness."

"These make us great"—such are the words ; but they should read, "These *would* make us great ;" for the internal resources of a State can never be developed while men are every where exhausting the land preparatory to its abandonment, as is the case in all the Southern States. If Alabama would be great, she must follow the advice of ADAM SMITH, in compressing her cotton and her food into cloth, thereby enabling them to be transported cheaply to distant markets, and enabling her to maintain direct trade with the producers of those commodities that she desires to consume, instead of finding herself compelled, as now, to perform all her exchanges through the medium of Northern and English ports, Northern and English ships, and Northern and English merchants.

No State in the Union possesses greater resources than Alabama ; but they will never be developed, nor will she ever attain the "strength and power" to which she now looks forward, until she shall have the "wisdom" to understand that protection is the real and only road to perfect freedom of trade, and the "prudence" to unite with her fellow-States in the adoption of that policy.

THE GOOD OLD PLOUGH.

[SUNG BY THE HUTCHINSON FAMILY.]

LET them sing who may of the battle-fray,
And the deeds that are long since past ;
Let them chant in praise of the Tar, whose days
Are spent on the ocean vast :
I would render to these all the worship you please,
I would honor them even now ;
But I'd give far more, from my heart's full store,
To the cause of the good old plough.

Let them laud the notes that in music float
Through the bright and the glittering hall,
While the amorous twirl of the hair's bright curl
Round the shoulders of beauty falls :
Yet dearer to me is the song from the tree,
And the rich and the blossoming bough ;
Oh, these are the sweets which the rustic greets,
As he follows the good old plough.

Full many there be whom we daily see,
With a selfish and hollow pride,
Whom the *ploughman's* lot, in his simple cot,
With a scornful look deride ;
Yet I'd rather take aye a hearty shake
From his hand, than to wealth I'd bow ;
For the honest grasp of that hand's rough clasp
Has stood by the good old plough.

All honor be then to those gray old men,
When at last they are bowed with toil !
Their warfare then o'er, why, they battle no more,
For they've conquered the stubborn soil :
And the chaplet each wears is his silvery hairs ;
And ne'er shall the victor's crown
With a laurel crown to the grave go down
Like the sons of the good old plough.

TOBACCO CULTURE IN THE UNITED STATES.

THE culture of tobacco is yearly becoming a business of increasing importance, particularly in the Middle and Southern States, where it has become one of the important staple products, and, under good and skilful management, constitutes one of the most profitable crops of the planter. While it is a product of every State in the Union, (California, perhaps, as yet excepted,) its cultivation, until recently, was principally confined to Virginia, Maryland, North Carolina, Kentucky, Tennessee, and Missouri, although in Connecticut and Pennsylvania considerable quantities began to be raised as far back as 1842. The product of that year was given by Mr. Ellsworth, Commissioner of Patents, who reported the crop of the various States and Territories as follows :—

States.	Pounds Gathered.	States.	Pounds Gathered.
Maine,.....	82	Alabama,.....	264,018
New-Hampshire,..	290	Mississippi,.....	145,212
Massachusetts,....	97,297	Louisiana,.....	118,146
Rhode Island,....	499	Tennessee,.....	28,289,171
Connecticut,.....	630,275	Kentucky,.....	45,494,083
Vermont,.....	781	Ohio,.....	5,264,766
New-York,.....	1,086	Indiana,.....	2,660,408
New-Jersey,.....	2,958	Illinois,.....	984,960
Pennsylvania,....	480,374	Missouri,.....	12,727,350
Delaware,.....	401	Arkansas,.....	212,266
Maryland,.....	21,199,696	Michigan,.....	2,725
Virginia,.....	59,627,369	Florida Territory,..	86,877
North Carolina,...	16,129,474	Wisconsin Territory,	362
South Carolina,...	55,654	Iowa Territory,....	11,153
Georgia,.....	141,523	Dist. of Columbia,.	65,654

Total amount in all the States and Territories,.... 194,694,891

The above report, our readers will perceive, was made ten years ago, since which time the culture of tobacco has increased in a very considerable degree. In Illinois, the Middle, and some of the New-England States, increased attention has been paid to the tobacco crop, which, in 1847, was 219,934,000 pounds, being an increase of nearly 25,000,000 pounds in five years; and in 1850, three years afterwards, the total quantity of tobacco raised in the States and Territories was nearly 224,000,000 pounds. Large as this quantity may appear to those who have not considered the subject, the demand for the article has not by any means diminished, but, on the contrary, continued to increase. It has been estimated by Mr. Ellsworth, that the quantity of tobacco produced in other countries than the United States is about 150,000,000 pounds; but such is its general use, and the increasing demand for it, that 1,000,000,000 of pounds from the United States alone would find a ready market, if it could be supplied of a good quality, and at prices not exorbitant, but which would be highly remunerative to the grower, leaving, as will be perceived, a wide margin for our enterprising planters to fill.

The increase of the consumption of tobacco in this country is a subject intimately connected with the interests of the planters themselves, as being an item of much importance in the increasing demand for its cultivation. The annual consumption cannot be less than 100,000,000 to 125,000,000 of pounds. It was computed, as long ago as 1836, with a population of nine

millions less than at the present time, that the annual amount paid by the consumers of tobacco in its manufactured state was \$20,000,000, which amount cannot now, at the lowest estimate, be under \$25,000,000. If we add to the value of this in the *leaf*, the value of the 100,000,000 of pounds annually exported, we shall find the amount actually received by our tobacco planters about \$16,000,000, which might probably be increased threefold, if the culture of the article received that attention which its growing importance would seem to warrant.

The culture of tobacco is every year extending itself into the Western States, and promises to become a most important article of export from the rich districts north and south of the Ohio. Says the *Cultivator*: "That tobacco can be grown in Indiana, Kentucky, and Tennessee, with greater profit than that attending the culture of wheat and corn, seems certain; and we doubt not that, as the cultivation progresses, and better methods of curing are adopted, the tobacco of the new States will rival in quality and celebrity that of the old. The plants on new land grow much more luxuriantly than on soils cultivated for any considerable time; but experience proves that the quality is not so fine. The best tobacco in any country is grown on lands in good condition, but not extravagantly rich, or highly manured."

In regard to the best method of cultivation, it may be difficult to decide in every particular, as some allowance must be made for difference of soils, climate, &c., &c. This would require a very prolix and tedious detail—altogether too much so for most of the readers of *The Plough, Loom, and Anvil*; nevertheless, we believe a general description of the mode and practice adopted by those who are most skilful and experienced in the culture of the tobacco plant will not be unacceptable to a large class of our readers; and we trust the facts shown will elicit some degree of emulation on the part of our agriculturists, in a matter that is very closely connected with their interests.

The time of planting the seed will differ according to climate. In the most southern portions of our country, the month of *January* is generally selected for that purpose, while every progressive step northward will, of course, change the season to that of a later date. In New-England, more particularly the valley of the Connecticut river, where the culture is carried on to a considerable extent, the month of *April* is the best adapted for putting the seed in the earth. The land for this purpose should be selected in a warm, friable, rich, but not too moist soil, with a southern inclination, if possible. This should be *new* ground, if possible, well grubbed and mellowed, after having a quantity of brush or other light, dry material burned over the entire surface, for the purpose of destroying insects and the seeds of noxious weeds, &c. After the plot has been carefully prepared, raise it into beds from three to four inches high, of a convenient length, and about three feet wide, the more easily to allow them to be kept clear from weeds, &c., from both sides of the bed. Sow the seed as thick as may be desired, about a table-spoonful to the square rod; rake carefully the surface, and roll or press down the earth thoroughly, that the soil may adhere closely to the seed. Should the beds become too dry, they should be watered and kept moderately moist until the young plants are ready for removal.

The best spot which can be selected for a tobacco field is where the ground is level, or nearly so, and the soil a rich, sandy loam, capable of absorbing and retaining moisture. The earth should be made perfectly mellow, either by ploughing or digging, at least twice before setting the plants. The ground being thus selected and prepared, it is ready for the reception of the plants. As soon as the leaves are a little larger in size than a dollar, which at the South will

of course be earlier than in New-England, they will be ready to transplant, which should be done with much care, in wet or cloudy weather. Should no such opportunity occur, they should be transplanted in the evening, and protected from the sun by leaves, or some similar covering. At the South, the palmetto leaf is generally used for this purpose. In the valley of the Connecticut river, where quite a business is made of raising the tobacco plant, if no convenient rainy season occurs near the time for setting the plants, the hill is made, about half a pint of water poured into it, and the plant immediately set. This method is said to be very successful, even in sunny weather, in that locality. The time for transplanting in that vicinity is early in the month of June, but at the South nearly two months earlier. After setting, the plants should be watered at least once a day, until the roots have become fixed or set in the soil.

The distance of setting the plants should be about two and a half feet apart in the rows, which should be about one foot farther than this, or three and a half feet distant from each other, which distance will admit the cultivator between them. Whenever the plants die, they should be replaced by others.

In their after culture, they require much the same kind of treatment as Indian corn; the plough, cultivator, and hand-hoe being freely and frequently used to keep down the weeds and loosen the earth. This should be repeated three or four times before hilling.

As the tobacco plant grows and developes, a blossom-bud puts out from the top, which is termed at the South *buttoning*. This top must be broken off, together with such of the upper leaves as are too small to be of any value. The plants are thus left usually from two to three feet high. From every leaf of the plant will shoot out suckers, which must also be broken off from the main stem, taking care not to injure the leaf by the operation. Late plants should be topped *lower* than those of early growth, as it will facilitate their progress and ripening. The plants should be suckered and cleared of worms, to which they are very liable, as often as once a week, until harvest time.

Cutting and curing tobacco is a business requiring much care and good judgment, in order to preserve the qualities of the crop. This we propose to make the subject of a future number.

WARLIKE TENDENCIES OF BRITISH FREE TRADE.

WE have on various occasions called the attention of our readers to the fact that British free trade, wherever found, is promotive of discord, war, and waste, and destructive of the happiness of those subjected to it. Ireland and India, Africa and America, at this moment, bear witness to the fact. Southern Africa is now being desolated by the Caffre war, and the very existence of the colony is now endangered. Upon the causes and conduct of this war a controversy has recently grown up between Mr. Samuel Gurney, an eminent Quaker merchant and philanthropist, and General Sir William Napier; and the last letter, just now published, confirms so fully the views that we have been accustomed to offer in reference to British policy, that we cannot omit to give it a place in our pages; at the same time desiring our readers to bear in mind that between all nations there is a perfect harmony of interests, or, in the words of Kossuth, *solidarité*; that war any where tends to do injury to men every where; and that they are therefore all directly interested in the adoption of measures tending to the destruction of the commercial centraliza-

tion established by Great Britain, the cause of more than half the wars of the world:—

"TO MR. SAMUEL GURNEY.—Respectable Friend: If the reporter of thy discourse has put words into thy mouth which were not uttered, he is to be blamed; and so far thou art exonerated from the charge of injustice; but thou dost again, without solid foundation, vilify military men, saying, 'They are far too liable to look to the sword for the settlement of international disputes.'

"I say unto thee in reply, that since the days of Marlborough, military men have never had recourse at all to the sword for the settlement of international disputes, and it is not becoming to charge them with it as an offense.

"Mark, friend, political and commercial men *they are who have always had recourse to the sword*. The soldier makes war, but he does not declare it. The political men declare war, and *generally for commercial interests*; but when the nation is thus embroiled with its neighbors, the soldier saves it from danger. He draws the sword at the command of his country, but he has nothing to do with the sin, if it be one, of having 'recourse to the sword for the settling of international disputes.' He fights sternly to save the nation from the consequences of its own act, namely, declaring war; but he loves not war. Why should he? What does he gain by it? Death, wounds, pain, disease, premature old age and poverty, and insult when his services are no longer in request. Is that justice, friend? Is it creditable?

"Thou hast said, 'Military men are far too liable to look to the sword,' meaning, of course, more liable than politicians and commercial men. Was George Grenville, whose stamp act produced the American War of Independence, a military man?

"Was Mr. Pitt, who made the long wars with France, a military man?

"*Was the Honorable Company of Traders which, from a factory on the Hooghly, extended its bounds by wars to a mighty empire, composed of military or commercial men?*

"Was Warren Hastings a military governor? Was Lord Wellesley one? Was it a military governor who declared war against China, to enable iron-headed old rats to smuggle opium, in defiance of the laws of that great state and of morality?

"Were they military governors who commenced the Affghan war, the Punjaub war? Were those military or commercial men who established and carried on the slave-trade, with all its African wars—that trade which has recently been declared by Lord Palmerston to be unapproachable in atrocity, though all the other crimes of all nations, in all times, were heaped together for the comparison?

"And think not, friend, though I have confined my justification of military governors to Sir George Napier, that he only can claim exemption from thy censures. Inquire, and thou wilt find it is not so. Cease, therefore, if thou wouldst be counted among the just, to vilify soldiers. And, friend, thou hast not yet answered my question, *What manner of men be they who supply the Caffres with arms and ammunition?*

"Nov. 21."

"W. NAPIER, Lieutenant-General."

FOLDING SHEEP—ANIMALIZED MANURES.

THE folding of sheep, says Skinner's *Elements of Agriculture*, though not much practised with us, is very general in some countries, and is attended with many advantages. The system is best adapted to light, sandy lands, and to places difficult of access to the manure-carts. The fold is usually made with netting or light scantling, so arranged as to be easily taken apart. The form is square. The sheep are driven in every night, and the fold is removed when the ground occupied by it is sufficiently manured.

Among animal manures, we may mention flesh, blood, bones, horn, poudrette, etc., as all being exceedingly valuable.

When a horse, a cow, or a sheep dies upon the farm, it should never be left to taint the air by its decay. It should be covered with mild lime, and then a heap of earth thrown over it of some eight or ten times its own bulk. The earth becomes saturated with the fertilizing gases, and furnishes a load or two of manure, well worth the trouble of making.

Bones have been known and used as a manure for a long time past; and

on the lighter soils, to which they are adapted, they constitute the most valuable auxiliary fertilizing substance that has yet been discovered. The bones are reduced, in a proper machine, to the size of half an inch, and strewed upon the land at the rate of twenty bushels to the acre. The effect on favorable soils is great and lasting; and they succeed best on all light lands, on limestone soils, and on the lighter loams. On all wet lands, whether clays, damp loams, or moist gravels, they do not pay. The inference from this is, that *bones are best suited for dry seasons and dry climates.*

O V E R - P R O D U C T I O N .

Look where we may, under the tariff of 1846, we find a state of things that is pleasantly styled by the advocates of the British monopoly of manufactures and trade, "over-production." There is too much wheat in the market, and therefore the price is so low that the farmer stacks his crop; there is too much cotton, and therefore the prices have fallen forty per cent. below those of last year; there is too much lumber, and too much iron, and therefore the furnaces are being sold out by the sheriff; too much cotton cloth, and therefore the cotton mills are closed; too much woolen cloth, and therefore the demand slackens; there are too many ships, for which reason freights are very low; and there are quite too many traders, the consequence of which is, that they are forced to take large risks, and ultimately to become bankrupt; and thus are the ship-owners and merchants experiencing the disadvantageous results from the adoption of a policy that was deemed sure to enrich them, however ruinous it might be to their unfortunate neighbors who had invested their means in mills, furnaces, or mines. We have now before us an account of the hide market of New-York, from which we take the following passage:

"The overplus of excessive and unnecessary manufacture will next year plague our trade, not only in unsettling prices, but in leaving over a large quantity of old, stale stock, injuring the general market, and finally winding up in ruinous losses. When we consider that nearly 1,500,000 sides more than our market actually requires have been manufactured and in process of manufacture, during 1850 and 1851, the present disastrous aspect of the Leather business finds no hope of improvement in 1852."

It might, perhaps, be supposed that this state of things had resulted from a great excess in the quantity of hides brought to market, but such is not the case. The total imports, foreign and coastwise, into New-York in the first ten months of 1850 were - - - - - 1,366,131

While those of the same months of 1851 were only - 1,320,880

Deficiency, - - - - - 45,251

What change has taken place in the *number* of hides imported, we have no means of knowing; but we do know that the *value* of imports four years since was almost as great as now, and yet there was then no complaint of glut of the market. The real cause of difficulty now existing is, that there is a gradual diminution in the consumption of all the commodities required for the convenience and comfort of man, because of a diminished power of purchase, resulting from the action of the present revenue system. We consume less cotton, and there is more that must seek a market abroad to lower the prices of the world; we consume less food, while our people are being driven from the mines, and furnaces, and mills, to become producers of food, and therefore it is that prices are low, and the farmers unable to purchase cloth or iron;

we consume less cloth, and the cloth manufacturer is unable to pay wages to be employed in the purchase of food; we consume less lead, and the lead miner can buy no cloth; we need no mills, and there is less demand for iron; we open no mines, and we build no furnaces, and there is less demand for labor; and thus it is that there is produced a glut of all the good things required by man, while thousands are almost perishing for the need of those things that so much abound, and hundreds of thousands consume far less than is needed for their comfort and their health. To remedy all this, to put an immediate stop to over-production, nothing is needed but the adoption of protection—efficient protection—as the road to perfect freedom of trade. Such a measure would at once produce a demand for labor to be employed in building new mills and furnaces, and opening new mines, and for working old ones; and a demand for food, and cloth, and iron, and fuel, would at once arise, that would put an end to all complaint of over-production. Can the agriculturists of the nation be benefited by a system that forces the whole nation to become producers of food and cotton, and causes a glut of both? Must they not be benefited by the adoption of one that divides the nation into producers and consumers—customers, instead of rivals to each other? It is really time that they should awaken to the fact that they it is that need protection.

BLESSINGS OF BRITISH FREE TRADE.

"A GENTLEMAN who has been traveling in the southern counties [of Ireland] gives a melancholy account of the absolute desolation caused by the continuous flight of the masses towards the land of promise at the other side of the Atlantic. In a district of some twelve miles of country, at the Kilkenny side of the county of Waterford, the population have altogether disappeared; there was not, he says, a human face to be seen during a drive of two hours; the very dogs had deserted, and the place looked as if some pestilence had swept away all traces of the inhabitants. As one of the natural consequences of the Celtic exodus, the profession of the law is nearly annihilated in all its branches; barristers and attorneys are threatened with one common ruin. Then Encumbered Court has all but swallowed up Chancery, with its very long fees, and longer delays and vexations."—*London Times*.

A hundred and sixty years since, William III. assured his Parliament that he would comply with their desire that he should "discourage the woollen manufacture of Ireland." From that day to the present, England has persisted in maintaining the policy of separating the consumer from the producer, and the results are now seen in the probable abandonment of the land by the whole population, except those who, by reason of disease, old age, or infancy, are compelled to remain behind.

Having exhausted the land and starved the people, the system next reduces the landholder to beggary, and the profession of the law is now feeling its effects; and thus is it established that, whether for good or ill, the harmony of interests is perfect, all waxing and waning together. It is a common impression that scenes of distress afford a great harvest to gentlemen of the law, and yet nothing is more erroneous. They grow rich as their neighbors are enriched, and they suffer when their neighbors suffer. To such of our readers as are connected with the practice of the law, we recommend a comparison of their receipts in the free-trade times of 1841-2, and the protection times of 1846-7, with a view to determine whether or not their receipts were as large when their neighbors were being ruined by British free trade as when they were being enriched by that American system of free trade which looks to making a market on the land for the products of the land.

THE CENSUS ON AGRICULTURE.

THE Philadelphia "North American" collates the following interesting statements from the agricultural returns in the census of 1850:—

In the extent of improved land within her borders, Pennsylvania ranks fourth in the list of States, New-York having 12,285,077 acres, Virginia 10,150,106 acres, Ohio 9,730,650, and Pennsylvania 8,619,631. Georgia follows next in order, with 6,323,426 acres. The large extent of mountain-land in Pennsylvania restricts her area of cultivation; and it is not, therefore, strange that Ohio, which has no mountains, should exceed us in the list. And although Virginia has, like us, extensive mountain ranges, occupying a large portion of her soil, yet it should be remembered that the State is much larger than ours, and longer settled. Still this matter is worthy of serious attention, and may be dwelt upon with profit, as showing the vast field for improvement which the interior of our State presents, not merely in the extension of roads and avenues, but in the settlement of wildernesses, the clearing away of forests, and the extension of cultivation. The northern and western portion of Pennsylvania presents, in not a few counties, the appearance of a trackless wilderness. Some townships, where the land is good, have scarcely any inhabitants. The proposed road to Erie from Sunbury would open a way through some of these parts, and, no doubt, soon attract thither a stream of population and trade.

But while the area of cultivation is thus comparatively limited, it is worthy of note that Pennsylvania occupies no mean position in an agricultural point of view, and, in fact, that our State ranks higher in this respect than has been generally supposed. While we rank fourth in the list with regard to the area of improved lands, we rank second as regards the value of farming implements and machinery, viz.:—New-York, \$22,217,563; Pennsylvania, \$14,931,093; Ohio, \$12,716,153; Louisiana, \$11,326,310; Virginia, \$7,021,658.

Thus it will be perceived that our agriculture is of a very substantial and superior character. In the value of live stock, our position is nearly as good, viz.:—New-York, \$74,672,356; Pennsylvania, \$42,146,711; Ohio, \$43,276,187; Virginia, \$33,607,362. In these two very important points, Pennsylvania is far ahead of every other State except New-York and Ohio; and in the matter of agricultural implements and machinery, is much superior to Ohio.

In the matter of wheat producing, our good old State stands at the head of the list, viz.:—Pennsylvania, 15,482,191 bushels; Ohio, 14,967,056 bushels; Virginia, 14,516,950 bushels; New-York, 13,073,357 bushels. When we remember the enormous calculations of the Cincinnati editors with regard to the quantity of wheat produced by Ohio, and the claim so repeatedly made for her, without denial, that she far exceeds any other State in the Union in the production of this cereal, we are a little surprised at the statement.

In the production of Indian corn, Pennsylvania, with 19,707,702 bushels, ranks above New-York, with 17,944,808; but these amounts are far exceeded by Virginia, Georgia, North Carolina, Alabama, Mississippi, Tennessee, Kentucky, Ohio, Indiana, Illinois, and Missouri. The production of the six last-named States is so great that we quote it, viz.:—Ohio, 59,788,750 bushels; Kentucky, 58,922,783 bushels; Illinois, 57,179,283 bushels; Indiana, 52,887,564 bushels; Tennessee, 52,137,863 bushels; Missouri, 35,719,042 bushels.

The leading tobacco growing States are—Virginia, 66,516,492 pounds; Kentucky, 55,765,259 pounds; Maryland, 21,199,281 pounds; Tennessee,

20,144,380 pounds; North Carolina, 12,058,147 pounds; Missouri, 17,038,364 pounds; Ohio, 10,480,967 pounds; Pennsylvania produces 857,619 pounds.

Alabama produces the most cotton; Mississippi ranks second, and Georgia third.

In the production of wool, Pennsylvania ranks third; New-York producing 10,021,507 pounds; Ohio, 10,089,607 pounds; Pennsylvania, 4,784,367 pounds.

Our State, again, ranks second in the production of wine; Ohio making 44,834 gallons; and Pennsylvania 23,839 gallons.

In the production of butter, Pennsylvania ranks second; New-York producing 82,043,823 pounds; Pennsylvania, 40,554,741 pounds; Ohio, 34,180,458 pounds.

In regard to cheese, we are exceeded by New-York, Ohio, Massachusetts, Connecticut, Vermont, and New-Hampshire. Pennsylvania produces 2,395,279 pounds, while New-York produces 49,785,905 pounds, and Ohio 21,350,478 pounds.

We make more hay than any other State, except New-York, viz.:—New-York, 2,714,734 tons; Pennsylvania, 1,826,265 tons; Ohio, 1,360,636 tons.

In flaxseed, Ohio ranks first, yielding 185,598 bushels; Kentucky next, 80,458 bushels; New-York next, 53,824 bushels; Virginia next, 53,333 bushels; and Pennsylvania next, 43,627 bushels.

In maple sugar, Pennsylvania ranks sixth in the list; New-York producing 10,310,764 pounds; Vermont, 5,159,641 pounds; Ohio, 4,521,643; Indiana, 2,921,638; Michigan, 2,423,897; Pennsylvania, 2,218,644.

PRESERVATION OF EGGS.

THE three following cheap and easy modes of preserving eggs for culinary use are taken from *Browne's American Poultry Yard*:—

Recipe No. 1.—Pack the eggs to be preserved in an upright water-tight cask, with their small ends downwards. Take eight quarts of unslaked lime, one half pound of common salt, two ounces of cream tartar; mix in water so as to bear up an egg with its top just above the surface; pour the mixture into the cask containing the eggs, and they will keep sound and good for two years.

Recipe No. 2.—Pack the eggs to be preserved in an upright earthen vessel or tub, with their small ends downwards. Procure, melt, and strain a quantity of cheap tallow or lard, and pour, while warm, not hot, over the eggs in the jar till they are completely covered. When all is cold and firm, set the vessel in a dry, cool place, till required for use. After the eggs are taken out, the grease need not be wasted, as it will serve for making soap, or many other household purposes.

Recipe No. 3.—Pack the eggs to be preserved in common salt, with the small ends downwards, and they will keep tolerably good for eight or nine months.

HOME-MADE FURNITURE.

THE simplest and cheapest kind of furniture, says Downing, by which an air of taste may be given to a cottage, consists of a plain box or bench, made of boards, by the hands of the master of the dwelling, stuffed with hay, corn husks, moss, or hair, held in place by a covering of coarse canvas, and covered with chintz by the mistress of the cottage. Seats of all kinds are made at very trifling cost in this way, so that, with a little ingenuity, a room may, by the aid of a few boards nailed together, a little stuffing and canvas, and

a few yards of shilling chintz, be made to produce nearly the same effect as one where the furniture is worth ten times as much.

The next step is to add square pillows or cushions to all the benches, seats or couches, in order that any person sitting upon them may have a support for his back without touching the wall. Another of the cheapest and simplest seats for a cottage, is the barrel chair. These chairs are easily made by sawing off a portion of the barrel, nailing on a few boards to form the seat, and leaving a part of the staves a little higher than the others to form the back or arms. To make the high-backed chair, the staves must be pieced out a little, the outside or rim of the back being confined in its place by a piece of hoop neatly applied. The seat and back are stuffed with any cheap material, covered with strong, coarse canvas, and covered with chintz.

CULTIVATION OF TEA IN THE UNITED STATES.*

A VOLUME, the title of which we give below, has just been placed in our hands by the author, who has been for some fourteen years a resident and cultivator in India and China. The author, FRANCIS BONYNGE, Esq., is a gentleman of extensive experience in the cultivation of the tea and other Oriental plants; and he has in this volume presented the results of his observations and researches, for the purpose of drawing the attention of the American people, and particularly the planters of the Southern States, which he believes to be well adapted to the production of tea, to the importance of introducing not only the great Chinese commodity, but indigo, coffee, and several valuable trees, into those States whose soil and climate are suitable.

Mr. Bonyngé is evidently in earnest with his subject. The first part of his work is occupied with a review of the cotton trade, its past, present, and probable interests; and his conclusions are, that the cotton and rice must become more unprofitable by the reduction of the price, until positive ruin of the planting interest will be the inevitable result. A suspension of production, or the expedient of withholding part of the crop from market to make it scarce and raise the price, will not effect a permanent advantage to the grower; for the laws of trade are such, that, like the laws of hydrostatics, trade will find its level as water will. To attempt a defiance of these laws by such forced expedients, will only bring a disaster proportioned to the violation of nature's provisions.

A diversification of industry, therefore, and the introduction of new staples, suited to the soil, will open new sources of wealth, promote a better system of exchanges of products, and diminish the cost of transportation. Indeed, Mr. Bonyngé maintains that we can produce tea for less than the cost of transportation itself.

The volume discusses the advantages of cultivating the several trees named in the title, gives a review of the opium trade, and in closing presents a picture of the "Present and Future of America," in which the author exhibits his views in relation to the Anglo-Saxonism of the United States, Emigration, Free and Slave Labor, &c. &c., wherein with candor and earnestness he submits the results of his experience and the convictions of his mind on these questions. For the present, as we shall take occasion to speak of the work again, in reference to its bearings upon our agricultural and economical inter-

*THE FUTURE WEALTH OF AMERICA: Being a Glance at the Resources of the United States, and the Commercial and Agricultural Advantages of cultivating Tea, Coffee, and Indigo, the Date, Mango, Jack, Leechee, Guava, and Orange Trees, &c.; with a Review of the China Trade. By FRANCIS BONYNGE. New-York: Published by the Author. 1 vol. 12mo, 242 pp. 1852.

rests, we will give our readers an extract from the work, in which the cultivation of tea in China and America is presented in contrast, and which contains information which will be not less interesting than valuable to our readers:—

It has been supposed that the Chinese could bring their barren mountains and hills under tea cultivation. They may do so; but they never can make barren or sterile mountains, nor any unfavorable soil, produce productive tea trees. It is a physical impossibility for the tea plant to be productive in other than a soil that would be capable of producing other things. Tea trees, as well as all plants, trees, and vegetables, require nourishment; and the richer and deeper the soil, the better.

The plant likes a loose, loamy soil, of a yellow to a reddish color. It does not like a hard, stiff earth, nor will it do at all in a dry, parched, or baked earth; sand with clay mixed, if deep, would do well; or a clay soil, with sand of two and one half to three feet deep, would do well also.

The root of the tea tree penetrates the soil downwards, in pursuit of sustenance; therefore, if the soil be not very rich, but deep, it will do well; and for the same reason, the tea plant can support a very severe frost, as its root extends below its influence. The root penetrates directly downwards, having none of any size extending horizontally on or near the surface of the earth, for frost to injure. In case of a very soft March, and moisture that might force out the young leaves, and then frost coming on in April, it would injure the young leaves, not the tree; and that crop might be lost, but the other three would be all safe.* However, the leaves of the finer teas are collected soon after budding, and might therefore escape; and in any case, it could be only a part of the young leaves that could be injured from an irregular night's frost. It happens in China that the April crop is at times more or less damaged by frost. However, I do not refer to a slight hoar-frost, but a smart night's freezing.

I have taken up a tea tree of some thirty-five feet high. There were but a very few horizontal weak roots. The mean or tap-root was near three and a half feet in length.

Mr. Ball had been told by the Chinese, that a vast improvement was effected in green tea, by bringing the plants from the hills into the plains, and by cultivation and manure; and that this practice had existed for six hundred years. The Catholic missionaries stated to Mr. Ball, that "the soil should consist of vegetable mould, sprinkled with sand, light and loose, and rather moist;" and again, the missionaries replied, "that the tea plant may be planted either in a rich or poor soil, sandy or garden soil, but that which is moist is most suitable;" and again they add, "Garden grounds, and the embankments of gardens or fields, are the most favorable." It may be seen from this, that what tea requires is depth of soil and moisture. "It is planted as a hedge-shrub, both in China and Japan, and along the ridges of the fields;" So say the Catholic Missionaries. The soil of Chusan is very light and sandy; tea is grown on it for domestic use, not for export. The soil of Amoy and Quang-Tong is a stiff, hard soil, unfit for tea. It is grown in both districts, but is of so inferior a quality, and there being no possibility to roll the leaf, which is hard and dry, and the returns from it are so trifling, that the natives will not manufacture it beyond the simple drying of the leaves, which they take into Canton in baskets for sale, and dispose of it at two to four cents per pound. This tea is very largely mixed with the good teas, and sold to England or America.

It is of these trees the Chinese give us seeds. Amoy is in the 24th deg.

* Four crops yearly.

N. lat., and Quang-Tong is the province of the city of Canton, N. lat. 23 degs.; and these plants being at hand, the Chinese give us as much seed as we require. The proper tea seeds are to be found some one thousand or twelve hundred miles from Canton, and two hundred and sixty miles from Shanghae. Traveling is slow work in China; there are no steamers or railroads there, and that part, up from the 25th degree of north latitude, is exceedingly mountainous. To get good seed is not to be accomplished. The East India British Government (and no party had the same opportunities) could not succeed, and brought round to Calcutta large quantities of these seeds, which they sent to the North-west Kamoun, and to the North-east Assam. I cultivated, and had several thousand plants; the Assam Company, too, the only other party cultivating tea, got in proportion. Neither the Company nor I could get any tea from them, except we stripped off all the leaves, and, like the Chinese, dried them, in which state we could find no market.

TEMPERATURE.

Tea will not bear great excess of temperature. It would live in the open air in England or Ireland, if it had time to take root. There is a large plant in Kew Gardens exposed, but I believe they give it some kind of protection in the cold season. I am of opinion that, with perseverance, tea might grow in Ireland, as fancy hedges, by a great deal of care being taken the first year. But these pots, in which all plants, at least all exotics, are condemned to linger out a few years of a miserable, stunted existence, are the bane of all success. Look at a tea plant, with its length of root, in an eight or nine-inch pot!

There is no country subject to greater extremes of temperature than China. In the month of April, even as low as 31 deg. of N. lat., the cotton and other annual plants are frequently destroyed by frost; and in the 29th deg. of N. lat., the tea plants are obliged to be covered over with rice straw, and bound with ropes, to protect them from frost and snow. Mr. Fortune says he saw the thermometer stand as high as 100 degs. in the shade, at Shanghae, and that it invariably fell to 12 degs. Farenheit in winter.

It is, in a great measure, the great difference in the altitudes of China, that causes so great varieties in its climates. Fogan, which is in 27 degs. 4 min. N. lat., is mild throughout, as the following will show:—

Fogan.	Mean of the four hottest months,	-	-	-	-	82 deg.
"	Annual mean,	-	-	-	-	67 "
"	Winter mean,	-	-	-	-	57 "
Charleston.	32 deg. 45 min., N. lat.					
"	The mean of the four hottest months,	-	-	-	-	81 " 34 min. average.
"	The annual mean,	-	-	-	-	66 " 45 " "
Savannah.	32 deg. 5 min.					
"	Annual mean,	-	-	-	-	68 " 3 " "

Fogan is the southern point of the tea district, which stretches northward up to 31 degs., and among the high and cold mountainous regions. Probably in the interior of China, in valleys, it may be grown some degrees higher; and it is not to be doubted that it is grown higher for domestic use.

If the comparisons of the climates of America and China be followed up, it will be seen that the temperatures of 32 degs. 5 min. and 32 degs. 45 min. of Savannah and Charleston, are the same as 27 degs. 4 min. of Fogan, China. The highest altitude of Georgia, America, is under two thousand feet; the latitudes, from 27 degs. upwards, in China, are of a very great altitude, being

mountainous regions. The cold in America will be very much moderated when cleared of its continuous forests.

EXPENSE OF CULTIVATING TEA IN THE VALLEY OF ASSAM, AND IN THE TARTAR COUNTRY, AND RETURNS.

The following estimate of expenses of cultivation and manufacture of tea on one thousand acres, was made out for a member of Parliament, in 1850:

One Superintendent, \$250 per month, yearly, - - - - -	\$3,000
" 1st Class Assistant, \$125, " " - - - - -	1,500
" 2d " " 75, " " - - - - -	900
Clearing and transplanting, and keeping clear, first year, 1000 acres,	4,875
Elephants, horses, &c., purchase, - - - - -	600
Building tools, &c, - - - - -	2,000
Total, - - - - -	\$12,875

SECOND YEAR.

European Superintendent, &c., - - - - -	\$ 7,200
Weeding, hoeing, and native head establishment, - - - - -	2,375
Manufacturing, say 40 lbs. tea to an acre, or on 1000 acres 40,000 lbs., at	2,500
Tea-chest and packing charges, \$2 per 80 lbs, - - - - -	1,000
Total, - - - - -	\$13,075

RETURNS.

100,000 lbs., at say 33½,	\$33,333
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THIRD YEAR.

European establishment,	\$8,700
Hoeing and weeding 1000 acres,	2,350
Manufacturing, say 200 lbs. per acre, of tea on 1000 acres—200,000	
lbs., at \$3 for 80 lbs.,	7,500
Chests, packing, and charges to Calcutta,	5,000
Total,	\$23,550

RETURNS.

200,000 lbs., at 33½ cents per lb.,	\$66,666
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FOURTH YEAR.

European and head establishment,	\$9,000
Hoeing and weeding 1000 acres,	2,350
Manufacturing, say 360 lbs. per acre, \$1 75 per 80 lbs.,	7,500
Chests, packing, and charges to Calcutta,	9,000
Total,	\$27,850

RETURNS.

360 lbs. per acre, on 1000—360,000 lbs., at 33½ per cent,	\$120,000
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The 360,000 lbs. of tea would cost, by the estimate, \$27,850, or 7½ cents per lb. for cultivation, manufacture, and transportation, some fourteen hundred miles, to Calcutta.

As the above items are condensed, it may be necessary to explain them. Salaries of superintendents on the fourth year were to be—superintendent, \$350; first assistant, \$250; second assistant, \$125 a month salary; making \$8,700, leaving \$300 for repairs of their houses, &c. Hoeing and weeding—

hoeing the land in the cold half of the year, and weeding it once during the rains.

To hoe an acre of land in America, two men are allowed, and of course it would not require more to cut down young soft grass, therefore there would be four men to each acre: for Indian labor there are allowed twenty men, at six cents per diem each: would make, on one thousand acres, \$1200 only. Then, in addition, there is allowed for native head establishment, support of elephants and horses, &c., and a very liberal margin for the managers to save to the Company.

Manufacturing item is made out at one man to pick 20 lbs. green leaf, wages six cents; and one man to manufacture 40 lbs. into dried tea—\$7,300.

Chest and packing, &c., all the wooden and leaden part of the tea-chest would be sent from London to Calcutta, and from Calcutta to Assam, and consequently be very expensive.

Under all these difficulties, which would not exist in America, the tea on the fourth year would not stand in more than $7\frac{3}{4}$ cents per lb., of which 2 cents might be saved in packages and transmission to Calcutta; making the expenses, at the very outside, only $5\frac{3}{4}$ cents per lb.

ACTUAL EXPENSES ON FORTY-FIVE ACRES OF TEA LAND IN THE TARTAR COUNTRY.

My own table, per month, \$50.	
Hoeing once, and weeding once, 45 acres. 10 men to hoe, and 10 men to weed an acre; wages, 6 cents; for hoeing and weeding 45 acres,	\$54
Picking leaves. 1 man, 20 lbs. of green leaf; one acre produced (average) 128 lbs.; on 45 acres, 5,760 lbs.; at 6 cents for every 20 lbs.,	172
Manufacturing. 1 man to every 40 lbs. green leaf; 5,760 lbs.; at 6 cts. for 40 lbs.,	86
Chests. Per 80 lbs., (quantity put into a chest,) 50 cts., chest for 14,400 lbs. dried tea. (These chests were second-hand China tea-chests.)	90
Transit to Calcutta,* 25 cents per 80 lbs.,	45
Firewood and charcoal, 7 cents per 80 lbs. for 14,000 lbs.,	12
Horses, 2; elephants, 2; \$10 per month.	
Or yearly, . . . \$120 }	
Table expenses, . . . 600 }	\$720, to be divided on 2000 acres, or say 1-40th part.

Total,	\$459
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RETURN.

320 lbs. the acre on 45 acres; 14,400 lbs., † sold at 63 cents, wholesale, . . . \$9,072

14,400 lbs. of tea cost, all expenses included, say \$477, or $3\frac{1}{4}$ cents per lb. when it would be landed in Calcutta.

The following year, in the middle of the season, I was attacked by the Tartars, and the above tea, which, from want of boats, I could not ship to Calcutta, and all the tea then manufactured, and in process of manufacturing, was destroyed.

PROBABLE EXPENSE OF THE CULTIVATION OF THE TEA PLANT, AND MANUFACTURE OF TEA IN AMERICA, ON ONE HUNDRED ACRES.

I will not insert an item for superintendence, as the planter would know best the care and expense necessary to manage one hundred acres of land under cultivation. The price of seeds cannot be ascertained; nor is that of any import, as tea trees last twenty-five to thirty years; so the planter would have to purchase seed but once.

* Of former year's teas.

† This tea, with a large quantity of other tea, was burned by the Tartars. The teas of the season prior sold for 63 cents.

The seeds are sown the first year in beds, from which the young plants are transplanted out into the land intended for plantation. I suppose one half acre of seedlings would answer for one hundred acres of a plantation.

I have given the expense of the first year, on the estimate of 1000 acres of land, at \$13,075. Circumstances called for that heavy outlay. The company was supposed to be formed in London; the scene of operation near the west of China, under management of agents; and therefore, however little the work the first year, the establishment must be full. In an unhealthy climate, as is that of Assam, it would not be prudent to trust to one superintendent, as the natives will not work but when closely watched; and in case of sickness, there must be some person to take charge. The case is different in America, where every farmer may have his tea plantation attached to his house.

The expense the first year would be for hoeing, pulverizing, drilling, &c., half an acre of land, and sowing the tea seeds, say six men. I have calculated that every slave stands his owner in 21 cents a day. I will give the calculations at the end of the book.

Weekly, say one man one day for ten months, $43 \times 6 = 49$ days, at 20 cents, say \$10.

SECOND YEAR.

The transplanting might be done in October, November, January, and February, or as the weather would permit. Say the "tea year" is from 1st September to end of August.

Clearing underwood, say four men per acre, or 100 acres at 80 cents per acre,	\$80 00
Hoeing 100 acres, four men per acre, at 20 cents each, or 100 acres at 80 cents per acre,	80 00
Transplanting 100 acres, two men per acre, or 40 cents per acre,	40 00
Hoeing the earth round plants, two men per acre, 100 acres,	40 00
Plucking 160 lbs. of green leaf per acre, or on 100 acres 16,000 lbs., one man to pluck 30 lbs.; therefore, 30 lbs. would cost 20 cents, or 16,000,	106 60
Manufacturing, in the absence of machinery, one man to every 60 lbs. of green leaf=16,000 lbs.,	53 30
Packing cases for 80 lbs., say 50 cents, for 4,000 lbs. manufactured tea,	25 00
Sieves, of cane or bamboo, (I cannot say what they would cost here, but making in India would cost about 5 cents,) say 50 cents each, 30,	15 00
Firewood and charcoal, say 10 cents for every 100 lbs., or 4000 lbs.,	4 00
Cast iron pans, 4, at \$2 each,	8 00
Total expenses,	\$451 90

RETURNS.

40 lbs. per acre, or on 100 acres, 4000 lbs., which may be valued at 100 cents for some few years,	\$4000 00
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THIRD YEAR.

Hoeing or ploughing 100 acres of land, say	\$40 00
Plucking leaves—800 lbs. of green leaf per acre, one man to pluck 50 lbs., or 20 cents for every 50 lbs.—80,000 lbs.,	320 00
Manufacturing, in absence of machinery—one man to 60 lbs. green leaf, or 20c. for every 60 lbs.—80,000 lbs.,	266 60
Sieves, (additional, 100,) at 50 cents each,	50 00
Pans, (4 pans additional,) at \$2 each,	8 00
Charcoal and firewood,	20 00
Packing-cases, containing 80 lbs., 50 cents, 20,000 lbs. dried tea,	125 00
Total expense,	\$829 60

RETURNS.

Per acre, 200 lbs. of dried tea, or on 100 acres 20,000 lbs.; say, at the retail prices, or a little higher first years of introduction of tea into America, and afterwards 20 cents per lb.,	\$4000 00
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FOURTH YEAR.

Hoeing over 100 acres,	\$40 00
Sieves, (additional,) 50, at 50 cents each,	25 00
Plucking leaves—say 1200 lbs. of green leaf per acre—on 100 acres, 120,000 lbs., at 60 lbs. for 20 cents,	400 00
Manufacturing 60 lbs. green leaf, at 20 cents, 120,000 lbs.,	400 00
Charcoal and firewood, 10 cents per 100 lbs. dried tea, or on 30,000 lbs. manu- factured,	30 00
Packages for 80 lbs., 50 cents, on 30,000 lbs.,	187 50
Total expense,	\$1082 50

RETURNS.

Per acre, 300 lbs., or 30,000 lbs. on 100 acres; say valued at 20 cents per lb., \$6000 00

It is necessary to say a few words on some of the above items :

Second year, I gave 4 men to clear brushwood, per acre.	
“ “ 4 men to hoe the land, per acre.	
“ “ 2 men to plant it, per acre.	
“ “ 2 men for a second hoeing, per acre.	

Total, . . . 12 men, per acre.

I believe planters will say that is sufficient. There is not much underwood in the American forests, compared to the forests of the north-east of India, where even four East Indians would clear an acre of brushwood.

After the second year, the land, if hoed once, would be sufficient, except there was a very rapid growth of grass or weeds; even the clearing away of such would be but the smallest decimal, not one tenth part of a cent per lb.

The plucking of leaves I put down 60 lbs. for one man. This is more than I used to get picked for me in the eastern frontier of India, but it has been done several times. I gave a certain amount for every 20 lbs. of green tea leaf, 8 pice, or about $6\frac{1}{4}$ cents; for 40 lbs., double that sum; and for 60 lbs., treble of it. Men, women, boys and girls, each picked 20 lbs. from 8 o'clock A.M. to 2 o'clock P.M. Many of the men, and some of the women, plucked 40 lbs.; and there were some who would go out early in the morning, and collect 60 lbs. by 6 o'clock in the evening. The work I gave men to hoe was one acre to ten men. Well, if two men can do that work in America, I should say one man would pick 60 lbs. of green leaf in the day; for if one man equaled five Indians at hoeing, I do not see why he could not equal the best Indian picker of leaves, for in both works it depended on the arms and perseverance. Picking leaves does not require the same physical powers as hoeing; it is more of application that is needed, and it is in that quality that Easterns are defective.

The manufacturing is easy, except that in the coarser kinds of teas it is difficult to roll the old leaves. One man can easily work as much as one will pick. I had, for making charcoal, cutting firewood, and manufacturing, three men to every five pickers of leaves. With machinery to roll the leaves, two men's labor would be economized.

In the fourth year, on the 100 acres, I have shown that 30,000 lbs. of tea cost, to manufacture, &c., \$1082 50, being but $3\frac{1}{2}$ cents per lb.; and that, by use of machinery, the quantity might be manufactured for $2\frac{1}{2}$ cents per lb., calculating the expense of slave labor at 20 cents per diem.

But calculating it at 50 cents per day, for free labor, it would be as follows:

Hoeing 100 acres, 2 men per acre,	\$100 00
Sieves, (additional,) 50, at 50 cents each,	25 00
Plucking leaves, say 1200 lbs. per acre, of green leaf, one man 60 lbs., at 50c., or 120,000 lbs.,	1000 00
Manufacturing, one man to 60 lbs. green leaf, or 120,000 lbs.,	1000 00
Charcoal and firewood, 10 cents per 100 lbs. dried leaf, or 30,000 lbs.,	30 00
Packages for 80 lbs., 50 cents, or on 30,000 lbs.,	187 50
Total expense,	\$2342 50

30,000 lbs. for \$2,343, or $7\frac{1}{2}$ cents per lb.

This would be a means of not only enriching the cultivator, but of keeping up the price of labor to some \$180 a year, and would leave the cotton trade and rice trade to fewer hands. It would give employment to the many, encourage immigration, and give to all a greater degree of prosperity.

The trade of a tea-maker might be an item the first season, but after the first crop, every man in the business would be *au fait*. Therefore I do not put down any item for a tea-maker. The rolling of the leaves might be done by machinery, and would, at the first estimate, in which I allow the expense of a slave at 20 cents a day, be a saving of $1\frac{1}{2}$ cents per lb.; or in the second estimate, wherein I allow the hire of labor to be 50 cents per day, a saving of $3\frac{1}{2}$ cents per lb. Leaving the cost of labor 50 cents, still, with machinery, simple in its structure, and therefore of very trifling cost, tea would cost the planter only $4\frac{7}{15}$ cents per lb.

It is most desirable that these estimates be keenly scanned; and to enable all to do so, it will be well to explain the item of produce, so that naught may be taken on *ipse dixit*.

It is shown that in the second year there would be per acre, from 1,210 young plants, 160 lbs. of green leaf collected throughout the year, which would be equal to $2\frac{1}{2}$ ounces for each tree. Now, if that $2\frac{1}{2}$ ounces be divided by four, and any party take a young peach plant, for instance, and on the leaves coming out in April, pluck such as would not injure the tree; it will be found there would be but a few leaves required to make one half or even one ounce. But entering on the fourth year, the acre is made to produce 1,200 lbs. green leaf, or 1 lb. of green leaf from each tree during four crops. A good tea tree will grow up to a height of 30 to 35 feet; but for facility of plucking leaves it is kept to seven, eight, or nine feet in height. Any person so disposed may select a peach tree of that height, of most luxuriant foliage, and ascertain if he cannot get 1 lb. of leaves off it, if not in one collection, at least in four, made throughout a year.

The tea tree is an evergreen, and its foliage is so rich that the eye cannot penetrate through it; birds, or any thing of that description, could rest within its branches without it being possible to observe them. The tree throws out white blossoms of sweet fragrance, and when the tree is plucked, it throws them out irregularly. There is nothing so delightful or refreshing as the fragrance from a tea-house when manufacturing is going on.

A tea plantation once raised is a permanent property; it would not answer those rolling-stone habits of the modern Scythian of South America, who wanders from farm to farm, and from State to State. A tea plantation may go on for 100 years. A tree will last 25 years. When it shows any symptoms of decline, it only requires to drop a seed by its side. No labor, no care, no loss of time is thereby incurred. If a garden hedge be required, a

fence round a field, or ornamental hedges, it will answer all such purposes, while, at the same time, it would yield a most valuable crop.

Let it be inquired, if it is a newly-heard-of thing, that tea can be produced under some six cents per pound?—or if it be a fresh piece of information, having no other grounds for its truthfulness than the well-arranged figures of estimates?

EXPENSE OF CULTIVATION AND MANUFACTURE OF TEA IN CHINA.

It is known that all China teas sell on an average for twenty cents per pound at Canton, after crossing mountains and valleys for 1,000 to 1,200 miles, and passing through some six parties' hands, each making his profits; and if it be considered that the tea that cost at Canton twenty cents per pound, by the time it is retailed here averages 100 cents per pound, it will be seen the price is enhanced five times. Well, the transportation of tea from the districts in China to Canton is more expensive than is its passage from Canton to America, and it passes through on the China side twice as many hands as it does on this side of Canton; therefore, if the price of production be only on the other side of Canton enhanced in proportion as it has been on this side, it would leave the cost of cultivating, manufacturing, &c., at four cents per pound.

MANAGEMENT AND PROFIT OF FOWLS.

A LATE writer says, that since the exhibition of fowls last November, there has been a great interest shown in regard to the different breeds of hens, and their management. Most persons are trying to obtain the largest hens. I think that small hens are much more profitable as layers. They lay more eggs than the large breeds, and they can be kept at half the expense of those that are extremely large. My object is to obtain the hens that will yield the most eggs according to expense. I have purchased a pair of Poland Top-knots, from which to raise stock for the next year. They weigh about seven pounds to the pair.

I will now give you an account of my management the past winter. I keep twenty-five hens and a protector, of the native breed. My pullets that were hatched in April commenced laying in November, and those hatched in May began to lay in December. I have not kept an account of the number of eggs laid during the winter. The first week in January they laid ninety-one eggs. In the first two weeks in February, they laid one hundred and ninety-two eggs. I sold the eggs at fifteen cents per dozen, and during the winter the cost of keeping the hens was only equal to two fifths the value of the eggs.

I give my hens corn and cob meal every day, mixed with milk or hot water. I keep corn, barley and oats by them all the time, and also ashes, lime and oyster-shells. Raw meat was given to them dry every day. I kept all the egg-shells during the summer, and gave them to the hens during the winter. I kept my hens in a house twenty by fifteen feet, with a large window on the south side. I find no difficulty in making my hens lay in the winter; most people fail by neglecting to supply animal food as a substitute for the numerous insects which they devour in summer.

Hens should be left out a few hours every day when the ground is bare. The best layers should be selected as breeders, and the protector changed every year. The principal reason that some farmers find no profit in keeping hens, is because they only half feed them, therefore they are always in mis-

chief, scratching for food. When farmers plant corn, they should give their hens a good supply, and they will not scratch it up. If hens are well managed, they afford more net profit than any other stock. Young hens should always be kept over, as they will lay better in winter than old ones.

PLOUGH DEEP!

BY WM. OLAND BOURNE.

Ho! Yeoman! turning up the sod!
 Thrust with your might the sharpened blade!
 Turn up, turn up the heavy clod,
 And find the treasures underlaid!
 Not on the surface lies the boon—
 Not where the skimming idler plays;
 Bring to the genial heat of noon
 The richer soil to catch the rays!
 Plough deep! Plough deep!

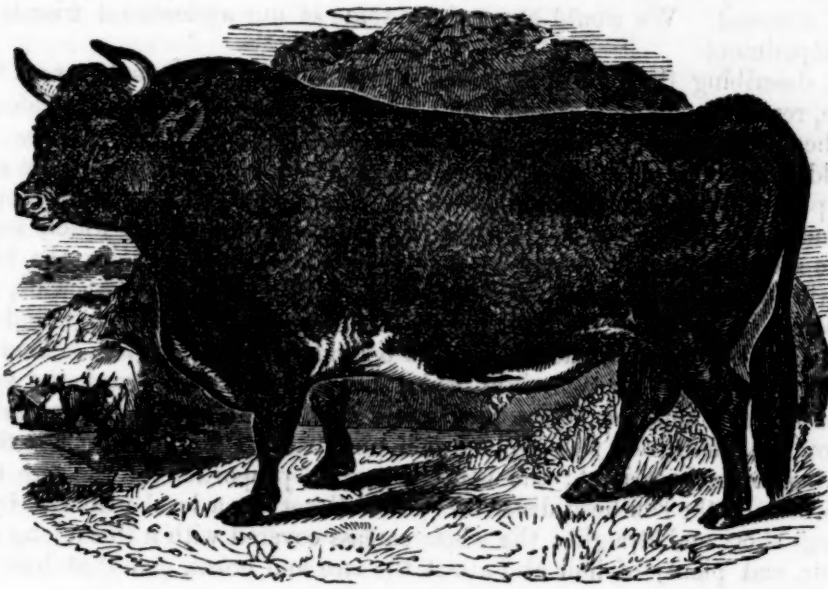
Give to thy sinewy arm the will—
 Give to thy toiling hand the might—
 Wealth buried deep shall come to fill
 The hands of him who toils aright.
 Turn up, turn up the under soil;
 Turn to the light, and air, and sky;
 A large reward repays his toil
 Who delveth deep where treasures lie!
 Plough deep! Plough deep!

Ho! Delver in the boundless field
 Where Truth lies waiting to be won!
 Not priceless treasures will she yield,
 While yet the task is just begun.
 Turn up, turn up, with patient hand,
 The deeper soil that hides the gold,
 And rubies with the glittering sand
 Thy longing eyes shall soon behold.
 Plough deep! Plough deep!

Ho! Battler with the old-time wrongs!
 Ho! Laborer for the rights of Man!
 Cheer your bold hearts with bolder songs,
 And toil for Freedom while you can.
 Turn up, turn up, beneath the walls,
 Foundations lying broad and deep,
 Till dome with pillar prostrate falls,
 In dust and ruin long to sleep.
 Plough deep! Plough deep!

Ho! Worker in the world's domain!
 Ho! Toiler in our mighty age!
 Before thee lies the open plain,
 In whose great strife thou canst engage.
 Turn up, turn up the pregnant earth!
 It waits to win the riper seeds:
 They shall, in Heaven's own time, give birth
 To glorious and immortal deeds!
 Plough deep! Plough deep!

New-York, Jan. 22, 1852.



WEST HIGHLAND, OR KYLOE CATTLE.

THIS is a breed of cattle of Scottish origin, found in the Hebrides, or the county of Argyle, which retain, in a singular degree, their aboriginal character. They have remained unchanged, or have improved only by selection, for many generations, and the best specimens of the native stock of these cattle now bear the highest prices in the English market among the highland cattle of Scotland. Their value consists in being hardy, easily fed, living and frequently thriving on the coarsest pastures. They will frequently gain from a fourth to a third of their original weight from six months' good feeding. The proportion of offal is not large, and their flesh is most equably and beautifully intermingled with fat, close and firm in its texture, highly flavored, and so well variegated, or "marbled," that it commands the highest price in every market where it has been introduced.

By selecting the choicest of the stock, the West Highlander has been materially improved. The Islay, Isle of Skye, or Argyleshire beast, readily obtain in the English market a higher price than any other cattle reared in the highlands of Scotland. One of the most successful breeders of these cattle has so far improved the native breed, that he has often obtained one hundred pounds sterling (nearly \$500) for three and four year old bulls out of his stock, and in one instance received £200, or about \$1,000, for one of his best. The engraving at the head of our article is a very correct representation of a young Kyle bull, and we doubt not it will be recognized by some of our readers who have seen the original breed in the western highlands of Scotland. As a breed of cattle for beef, they are evidently superior to any in this country; but for milkers they are not profitable, yielding but little more than half the quantity of milk, although the *quality* is superior.

Being a strong, hardy breed of cattle, and subsisting on coarse grass with but little care, requiring but little feed during the winter, when the weather is mild, and so readily and speedily fattened, we think their introduction into our Middle, and some of our Western States, would be of great value to the stock-breeders in those parts of the country, particularly where cattle are

reared mostly for the Eastern markets, where beef of a prime quality is in good demand. We would like to have some of our agricultural friends try the experiment.

In describing the West Highlanders, Youatt, in his valuable work * on cattle, remarks: "The Highland bull, or Kyloe, should be black, or pale red, the head small, the ears thin, the muzzle fine, and rather turned up. He should be broad in the face, the eyes prominent, and the countenance calm and placid. The horns should taper finely to a point, and, neither drooping too much nor rising too high, should be of a waxy color, and widely set on at the root. The neck should be fine, particularly where it joins the head, and rising with a gentle curve from the shoulder. The breast wide, and projecting well before the legs. The shoulders broad at the top, and the chine so full as to leave but little hollow behind them. The girth behind the shoulder deep; the back straight, wide, and flat; the ribs broad, the space between them and the hips small; the belly not sinking low in the middle, yet, on the whole, not forming a round and barrel-like carcass. The thigh tapering to the hock-joint; the bones larger in proportion to the size than the breeds of the southern districts. The tail set on a level with the back; the legs short and straight; the whole carcass covered with a thick, long coat of hair, and plenty of hair also about the face and horns, and that hair not curly."

CHEMISTRY APPLIED TO AGRICULTURE.

In the September number of the *Plough, Loom, and Anvil*, I observed a paragraph, headed "Science and Agriculture," which, in my opinion, is well calculated to create in the mind of the agriculturist a very erroneous estimate of the value of the science of chemistry in its application to agriculture. Although I do not entertain the slightest doubt of the facts therein stated by the writer, that the soil on Mr. Reverdy Johnson's farm, near Baltimore, was much exhausted, that it was analyzed by an able chemist, (Dr. David Stewart,) and found deficient in phosphoric acid, and that the fertility of this soil was so much restored by the application of the biphosphate of lime as to produce twenty-nine bushels of wheat per acre, yet I entirely differ from the writer in the opinion that this should be considered a "beautiful triumph of science." For I must be permitted to say, that I do not believe that the science of chemistry aided in the slightest degree in obtaining the result.

It appears to me very manifest that no benefit can result to the practical farmer from the analysis of soils until the chemist can first demonstrate the principles, or combination of principles, which constitute its fertility. This is a subject which still remains a mystery. Notwithstanding the scientific investigations bestowed upon it, no chemist has ever yet been able to ascertain what constitutes manure a fertilizing substance. Until lately, it has been believed to reside in its nitrogenous organic constituents; but this opinion, in a recent letter, has been repudiated by Liebig himself. He says: "If the nitrogen and carbonic acid formed by the decay and decomposition of the vegetable ingredients of manure were the cause of its fertilizing power, this ought also to be seen if the mineral substances were excluded. Direct experiments have shown that the nitrogen of the excrements can be assimilated by the plants, in the form of ammonia; but that ammonia, as well as carbonic acid, although it is indispensable for the development of all plants, can accelerate the growth

* Published by C. M. Saxton, 152 Fulton street, New-York.

of plants, and increase the produce of a field of grain, roots, and tubers, *only* if at the same time the mineral ingredients contained in the manure which is applied are in a state in which they are suited for assimilation. If the latter are excluded, carbonic acid and ammonia have no effect on vegetation." And these remarks are equally true with regard to the mineral constituents of manure. The sulphates, the phosphates, the nitrates, the muriates, and the carbonates cannot be demonstrated to be fertilizing principles when separate from manure itself. It is true they possess the power of increasing the growth of particular plants; but not one of them will feed plants in an exhausted soil.

In reference to the soil on Mr. Johnson's farm, Dr. Stewart says, "that one element only of a fertile soil was wanting, phosphoric acid." This opinion is certainly erroneous, for several reasons. First, That the fertility of this soil cannot be restored by the addition of the deficient quantity of the phosphoric acid only. Second, That the fertility of this soil can be restored without the addition of any substance whatsoever. If Mr. Johnson will cause a portion of this soil to be covered with plank, he will find its fertility restored long before the plank suffers decomposition. This could not be supposed to restore the deficient phosphoric acid, because we are taught that phosphorus is an elementary substance, which cannot be made by any chemical process. And we must possess the vivid fancy of a Petzholdt if we believe, with him, "that it can be derived from the atmosphere," although he admits that he is unable to detect its presence by any chemical test. Third, It cannot be demonstrated that the fertilizing value of manure depends upon the amount of phosphates it contains. Any other good manure would have imparted an equal fertility to this soil. Manure is the residue of putrefaction; and this is the only substance known to the practical farmer which feeds all plants in all soils and in every variety of climate. No substance whatsoever can be proved to be possessed of the fertilizing virtues of manure until subject to putrefaction.

The value of wine and vinegar is known to depend upon the attention paid to the circumstances necessary to develop each peculiar fermentation. Heat and moisture promote fermentation; but a cool, close, dark, and damp location, with a contact of air, is indispensable to the generation of the putrefactive process. It is certainly a fallacy to believe that the difference in the value of manure depends upon the difference in the chemical composition of those substances of which it is made. *The fertilizing value of manure depends solely upon the perfection of the putrefactive process.*

Mr. Kettlewell, of Baltimore, has published in the *American Farmer* his method of preparing bone-dust—phosphate of lime—and he may well claim for it fertilizing virtues equal to any manure; more especially if the sulphate of ammonia be present, which, he adds, "is made by adding sulphuric acid to fermented wine, and evaporating to dryness." Biphosphate of lime differs in no respect from this, except that the bones are dissolved by sulphuric acid, which does not prevent their speedy putrefaction.

If any portion of this land of Mr. Reverdy Johnson's be well manured, it will then be prepared to yield a crop, not of one kind only, but of any and every kind for the perfection of which experience has shown the climate of Maryland to be propitious. The poisonous plants will grow side by side with the most esculent plants, deriving their support in the same soil, from the same nutriment. Who can estimate the wonderful chemical process occurring during the lives of plants? What mind can comprehend the infinite chemical changes which this food experiences in its conversion into the most luscious fruits and the most deadly poisons?

The science of chemistry has conferred inestimable benefits upon mankind, in teaching, by the analysis of plants, the separation of their peculiar medicinal virtues. But how does this knowledge benefit the practical farmer? Does it teach him that, by the application of particular substances, he can increase the peculiar product of each plant? Certainly not. He knows that the only method by which he can increase the product of his crops, is by promoting the healthy and vigorous growth of the plants themselves, by the judicious application of manure—the only substance which he has ever known to produce this effect upon an exhausted soil. That the surface of the earth itself can be readily converted into the food of plants by shade alone, is a fact which cannot be controverted. This is the natural provision for vegetable life, and experience has taught the practical farmer that, like the natural provision for animal life, milk, it proves to be a far better nutriment than can be made of any other substance. Neither the food of animals nor the food of plants can be made in any other manner than that ordained by Providence.

Winchester, Va., Dec. 20, 1851.

R. T. BALDWIN.

FARMING STATISTICS.

DOCTOR A. HUNTON, Hyde Park, writes us as follows:—Mr. Frederick Theler, of Hyde Park, Lamoille county, Vermont, aged 63 years, being one of our careful and industrious farmers, and cultivating his farm to good advantage, I send you his statistics for the present year. Mr. Theler's *men's* help, beside himself, is—Nelson F. Theler, aged 40, living on the farm, a short distance from his father; another son 20, and one 17 years of age. They have this season had no help.

The farm consists of 160 acres, valued at \$5,000; 100 acres under improvement; mowing and tillage, 50 acres.

The stock consists of one yoke of oxen, and nine cows, . . . \$244 00

Three two year olds, \$17 each; five yearlings, \$10 each; . . .
eight calves, \$5 each, . . . 144 00

Four horses—two \$100 each; year old colt, \$50; breeding . . .
mare, \$25, . . . 275 00

Sheep and lambs (55) are valued at . . . 72 50

Farming implements, valued at . . . 180 00

Total amount of stock and farming implements, . . . \$915 50

The growth of the stock cannot be less than . . . \$100 00

Hay (55 tons) is \$275; straw and corn fodder, \$40, . . . 315 00

Dairy—butter, (600 lbs.,) \$90; cheese, (275 lbs.,) \$15 50, . . . 105 50

Wool, (115 lbs.,) \$39; corn, (185 bush.,) wheat, (50 bush.,)
oats, (200 bush.,) . . . 236 45

Potatoes, one third of a crop, injured by the rust, (250 bush.,) . . . 50 00

Turnips, and other roots, (90 bush.,) \$20; pork, \$96, . . . 116 00

It will appear the net produce of this farm is . . . \$922 95

The season has been unpropitious for potatoes, in consequence of the rust, or rot; and the cool nights have been very detrimental to vines, of which here is no account, the product of which would not be less than \$10. The corn, from the same cause, falls short of a usual crop at least one fourth.

The warmest morning in July was 66°; the coolest morning was 42°; the

mornings during the month, a majority of them, were below 55° , always noted at sunrise.

The warmest morning in August was 61° ; the coolest, 38° ; seventeen mornings in August, the mercury ranged below 55° , that being marked temperate. You will perceive that vegetables requiring as much heat as corn and vines could not arrive at their usual maturity. September was more propitious for corn than the two preceding months; from the 1st to the 19th September, we had fifteen fair, warm days, mercury ranging as high as 83° at noon.

As short articles are more apt to be perused than prolix ones, I have in this case studied brevity. If such statistics are of use to you, I will supply others.

[Please forward them.—EDITORS.]

EXPERIMENTS IN THE USE OF PLASTER.

MESSRS. EDITORS:—Having read and heard a great deal said about the good qualities of plaster, I came to the conclusion to make some experiments in its application. I accordingly purchased a quantity and tried it in various ways, that I might be satisfied whether it would be useful to me or not.

First, I planted corn on ground that had grown oats the previous year; and I manured it at the rate of a shovelful of green manure to the hill. I then left eight rows, which I planted without manure, and put in a large spoonful of plaster before dropping the corn. I then planted two other rows without any manure. The corn came up and appeared the most promising where the plaster was put, until hoeing time. I then put plaster on the remaining two rows, excepting a few rods at one end. After a few weeks I could not see any material difference between that portion where the plaster was applied and where it was not. It remained so until the latter part of the season, when the manured corn got the start, and at harvest it was about twenty-five per cent. more productive than the other.

I next applied the experiment to potatoes. I spread the manure before planting, except a strip wide enough for six rows, four of which I planted with a large spoonful of plaster in each hill; the other two I planted without any manure or plaster. There was not much difference in the appearance of the tops, with the exception that during the first part of the season they were a little darker colored, and in the latter part somewhat smaller. When I dug them, I commenced on the two rows that had grown without plaster or manure. I dug far enough to get two and three-quarters bushels. I next dug two with the plaster application—dug the same distance, and got two bushels and two quarts. The other two measured about the same as the first two rows. I suppose that in ploughing and harrowing the manure became somewhat mixed with the earth in these rows, so as to make that difference in them. In these two there were considerable many rotten, *but none in the four manured with plaster alone*, which were dug first.

The potatoes that grew where the manure was put were larger, and produced about the same quantity of sound ones that were in the two rows where there was no plaster or manure, and about one bushel in every twelve were rotten. I think, if I had put plaster on the whole piece, I should have got about seventy-five bushels where I got a hundred; and if I had planted *without any manure*, I should have got about the same quantity, and all would have been sound.

I tried plaster on another piece of corn that was planted with the manure

spread. I put it on at the first time of hoeing, but could see no difference any time during the season. I tried some on oats after they had got up, sowing a strip in the field a few rods wide, at the rate of about three bushels to the acre. They looked better in the first part of the season, but at harvest-time I could not tell by the looks where the plaster had been sown. I sowed some on a "knoll" in my mowing field, leaving half of it untouched, but could not see any difference between the plastered portion and the rest of the grass. The ground on which I tried it was very light and dry.

One of my neighbors also tried it for the first time, and thinks he got one-third more of corn, and about the same quantity of potatoes where he used the plaster. Another neighbor tried it on corn, and it nearly destroyed it. There was no corn where the plaster was put, while on each side there was a good crop. His land was rather wet.

I think I shall try it again, and not give up an article that is recommended so highly with but one year's trial. If it does any better next time, you may hear the result. I think it would be well for those who have never used it to try it in such a manner as to know whether it is of use to them or not.

South Carthage, Me., Jan. 7th, 1852.

W. V. TAINTER.

REMARKS ON THE ABOVE BY THE EDITORS.

The action of gypsum or plaster as a manure, is twofold. It serves as a direct food for several of the cultivated plants, and also "fixes" and retains certain soluble substances in the soil which are necessary for their nutrition. Gypsum contains also sulphuric acid, which acts beneficially in decomposing and bringing into activity the "humus" and insoluble matter accumulated in loams or peaty soils. It is decomposed by oxalic and humic acids, and also by the carbonates of soda, potash, strontia, and ammonia. Thus new combinations take place, which are attended frequently with good results, but in some cases it may prove detrimental; for instance, when a soil is too rich in humus, in which case too much gypsum should never be used, as the sulphuric acid, although combining with another base contained in the soil, would form a salt easily soluble in water, by which the plants would receive too large a quantity of the acid at once, and consequently the effect would be rather detrimental than otherwise.

Gypsum, like other calcareous substances, should always be applied judiciously, and generally alternate with other manures. Many fail of succeeding from the fact of not being fully acquainted with these facts. In the cultivation of grain and green crops generally, it is not considered as valuable as when applied to clover, lucerne, beans, peas, &c. For Indian corn, rye, and buckwheat, it is sometimes used, and, under favorable circumstances for the development of its virtues, produces good effects. In some cases, gypsum fails of producing any good effect, from the fact that the soil already contains sufficient sulphate of lime, or is deficient in some other substance necessary for the growth of plants. On land that has been exhausted by cropping, and contains but a small quantity of vegetable matter, gypsum will prove of but little value; neither on stiff, clayey, nor wet soils is plaster considered a valuable manure. The soils upon which gypsum operates most beneficially, are those which are light, dry, and sandy, or porous and open to admit the rains and moisture, which act as a solvent, and convey the manure to the roots of the plants.

Perhaps, as a general rule, land that will produce successive heavy crops of clover without sensible diminution, does not require plaster; but if the clover crop fails, and the application of plaster brings it forward, it pretty conclusively proves that the soil requires it, and it can be successfully applied to other crops.

"The best time for applying plaster," says Browne, "is in the evening or morning, upon the dew, or in calm and cloudy weather, just before or after a slight rain; for, if the weather be very rainy, its effect will be lessened, if not altogether destroyed. When sown with grain, its ordinary dose is equal in bulk to that of the seed, say two hundred or three hundred pounds to the acre; but to grass lands, or crops of legumes, potatoes, and Indian corn, five or six bushels to the acre is commonly employed; and in a compost of earth or dung, or combined with other manures, such as guano, rape-dust, &c., it has been applied to turnips with marked effect. If a little gypsum be strewn over barn-yard dung, while being turned over, before using, its activity is very much increased."

SWAMP MUCK AS A MANURE.

ONE of the most productive sources of wealth to the farmer is his manure heap and barn-yard. By good attention to the former, and not neglecting the latter, there can scarcely be a serious lack of productiveness in the soils cultivated by any of our industrious and prudent farmers, particularly those who study the nature, principles, and adaptation of the manures which they apply to the soil, and the crops that they are designed to propagate. Many of our agricultural friends seem to understand fully the necessity of manuring their lands and enriching the soil which they cultivate, but either from a want of knowledge of the best means of doing this, or rather the knowledge of doing it at the least expense to themselves, they fail, either through want of judgment in the application, or a want of knowledge of the resources which they themselves possess. It is almost a universal law in nature, that whenever there is a want of some vital principle necessary for the sustenance and rapid development of the vegetable kingdom, the means to restore that principle may be found in the same locality where it seems to be wanting. On many a farm, portions of which, having elevated hillocks with steep declivities, appear, and are really divested of nearly every particle of vegetable mould, presenting a surface composed almost entirely of sand and pebbles, (nearly pure silex,) and consequently incapable, in such a state, of affording the requisite nourishment for vigorous vegetable life, may be found a meadow, swamp, bog, or pond, rich in decaying or decayed vegetable matter, increased by the surface mould, which has been for years, by rains, winds, and other causes, swept from the now denuded hill-sides and accumulated in these natural basins or reservoirs, requiring only to be returned in a properly modified form, and incorporated with the silex of the hillocks, to make them highly productive.

The value of swamp muck is not, in our opinion, properly appreciated or known by many of our farmers, some of whom have themselves rich deposits of this valuable manure on their own premises. An instance of this kind with which we are familiar will serve as an illustration. A gentleman from the city of New-York, a few years since, purchased in the town of Cranston, R. I., a beautifully situated farm of about a hundred acres, but which, in the hands of a parsimonious and unskilful manager, had become very unproductive. The purchaser (who, by the bye, was *only* a "book farmer") paid what those who resided in the vicinity considered a very dear price for the farm, and was looked upon as "taken in" in his purchase. He, however, removed from the city, took possession of his farm, and commenced making improvements on the premises. The fences were repaired, the buildings renovated, a new barn erected on an improved plan, with manure sheds, water tanks,

&c., for receiving and retaining the liquid manure from his stock, and other improvements were in a state of forwardness. His neighbors looked on with astonishment. Finally he commenced, with some half dozen hired hands, digging a ditch, or rather a somewhat expensive *canal* through a rise of ground crossing the only outlet from what appeared to the farmers of that vicinity to be a worthless bog of several acres. They began to consider him almost *non compos mentis*, until, the object accomplished, and the bog drained, there appeared to their astonished vision an immense bed of the richest and most valuable alluvial deposit of almost purely vegetable formation, in some places nearly twenty feet in depth, and capable of affording not less than 50,000 cords in quantity, which was really worth *more than half the original cost of the farm!* He immediately procured two or three schooner-loads of refuse lime from Thomaston, Me., at a comparatively trifling cost, and with a few sturdy Irish laborers, with their wheelbarrows, commenced on one side of the meadow, and erected one of the most magnificent compost beds that we ever beheld, using alternate layers of lime and muck, in the proportion of about four or five bushels of the former to a cord of the latter, forming, at an expense altogether of forty-five to fifty cents per cord, a valuable manure, worth at least \$1.50, and rendering his deposit of muck more valuable than a mine of gold on his grounds. So much for a little "book" knowledge.

Many meadows and bogs, in their present state not only valueless but pestiferous to our agricultural friends, abound in this valuable manure, which, with a little expense in draining, digging, &c., might become by far the most valuable portion of their farms. Swamp muck is almost entirely a *vegetable* deposit, either wholly or in part decomposed. This only requires to be removed, thrown up in heaps, and exposed to the air during the winter months, to form a light, porous, dark colored, crumbling mass, which in most instances, to give it its full effect, requires an admixture with earthy salts, alkalis, oils, &c., the addition of lime, potash, wood-ashes, stable-dung, refuse animal matter, &c. &c. With these, in proper proportions, we know of nothing more effectual or permanent in renovating barren soils, or promoting the growth of vegetation in all its various stages.

In a future number, we propose to enter more fully into detail, and give the various admixtures with muck which are best adapted to the circumstances and interests of our agricultural readers generally.

NEW BOOKS.

Salander and the Dragon: A Romance of Hartz Prison. By FREDERICK WILLIAM SHELTON, M.A. New-York. John S. Taylor, 143 Nassau street. 1852. 12mo, pp. 250.

This work, recently published by Mr. Taylor, is one of deep and thrilling interest. It is the production of a young clergyman of distinguished abilities, and will be read with a degree of feeling unsurpassed since John Bunyan first put forth his immortal allegorical work, the "*Pilgrim's Progress*." Since that production, perhaps a more beautiful allegory than "*Salander and the Dragon*" has never appeared. It is written with the view of exhibiting by the author the detestable vice of slander in its most hideous light, and holding up its enormity to the full view of every reflecting mind. "Its design," says a contemporary, (and that very truly,) "is to exhibit the pernicious effects of slander; and surely no one can contemplate this odious offspring of the depraved heart as it appears in this fanciful sketch without abhorring and despising the reality. The names of the several characters are significantly chosen, and the grouping is managed with a fine artistic effect. The style comports with that chaste simplicity which should characterize an allegory, in which the veil should not be so elaborately and closely woven as to hide the modest mien of truth beneath." The *Independent* justly observes: "It is a sermon that ought to be preached every where. It has a great truth

in it. Who does not know it? Happy is he who has not felt the bitterness of the mischief which this infernal imp is working in the world. And if Mr. Shelton had done nothing else than to write this book, he would have lived to good purpose. We think the story will be read when he ceases to be heard."

In conclusion, we would remark, that it is a work that should be placed in the hands of every person or child that can read in the country; and if it does not have a tendency to check that "unruly member," a slanderous tongue, we are greatly mistaken. It is finely embellished, and sold at \$1.

Temperance Tales. By LUCIUS M. SARGENT. New Illustrated Edition. Two volumes in one. Boston: Published by John P. Jewett & Company.

The author of these tales is a lawyer of fortune, either living or having an office in Boston. At any rate, he once had. That he is a man of genius and a well-read scholar must be apparent to all who examine the volume named. We think he commenced these tales more than twenty years since, either as tracts or in some periodicals, appearing at intervals of unequal length, as he found it convenient to write. So popular, however, were they, that the labor was continued till they made over six hundred large and closely printed pages in small type. Hundreds of thousands of them have been scattered over the earth. Editions have been published in England and Scotland, and several of these tales have been translated into the German language. Editions have also been printed at Botany Bay, and at Madras, in South India. So popular are they still, that the publishers pay a high copyright for the privilege of printing; and our impression is, that the sum thus received is appropriated to the temperance cause or other charitable objects. Hence the friends of temperance, and all others who purchase and read this unique volume, will not only find themselves richly repaid for the money it cost them and the labor devoted to it, but will know that a portion of this money becomes one of the best public charities the world has known. Although the leading object of the writer is temperance, yet his mind is so richly stored with the treasures of literature, that he is constantly, and, as it were, almost without volition, scattering on his pages hints and facts relating to domestic economy, religion, morals, and business.

A Catechism of Familiar Things. By EMILY ELIZABETH WILLEMENT. Carefully revised by an American Teacher. Philadelphia: Published by Lindsay & Blakiston.

We have ever considered works of this class among the most useful. There is too much of a disposition with modern writers and teachers to discuss and teach what is exotic, or above ordinary comprehension, and to neglect that which is about us, or is on a level with the understanding. Let the young first be made acquainted with the objects of real life, of every-day occurrence, of things we see, and hear, and eat, and wear; which is easily done, because such ones readily make an impression on the mind; and then other objects with which we are less familiar, and which are less easily understood, may occupy the attention. All persons conversant with mental philosophy know this is the true doctrine. Hence we cheerfully recommend the above work. Although designed for the young, most persons, even of mature age, will find not a few things in it hitherto unknown by them. It is for sale by Mark H. Newman & Company, 199 Broadway, New-York.

The Dew-Drop: A Tribute of Affection for 1852. Philadelphia: Published by Lippincott, Grambo & Company.

This is one of the newly coined candidates for public favor as a gift-book. It has every attribute for a hearty welcome—comely, gentle, and genial, like the dew-drop that glitters in the morning sun; and it is as good as it is beautiful. We have seen no annual with a better list of contributors; and the illustrations, if not as numerous as in larger and more costly volumes, are appropriate, and of a character suited to persons of approved taste. From articles generally so deserving commendation, it is not easy to give preference to any two or three over all others; if we were to do it, the preference would be to the "Blind Psalmist," by Mrs. E. C. Kinney, and to the "Love that Lasts," by the Rev. Dr. Cheever.

The American Muck Book. By D. J. BROWNE, author of "Sylva Americana," "Forest Trees," &c., &c. New-York: C. M. Saxton, 152 Fulton street.

The above title gives but a faint idea of the nature of the work, which is a compendium of the various fertilizers, both mineral and vegetable, whether used as simple sub-

stances or as composts; and the whole is laid before the reader in such a clear and practical manner, that it cannot fail to be instructive. The mineral and fossil manures, the various properties of which are so little understood, are fully treated of, and the views expressed of them exceedingly interesting, while the value of the so much neglected liquid manures is fully set forth. Those who, like ourselves, have had for some years a personal acquaintance with Mr. Browne, were prepared to expect something good at his hands; but we certainly did not expect that he would have been able to compress so much valuable information into so small a compass. We consider this one of the most valuable agricultural works which Mr. Saxton has placed before the public, and trust that it will receive a circulation commensurate with its merits.

The American Agriculturist: Designed to improve the Planter, the Stock-Breeder, and the Horticulturist. Vol. X. New-York: Published by C. M. Saxton, 152 Fulton street. 1851.

The present volume of this useful publication comes to us as usual in its neat and pleasing attire, looking as familiar and agreeable as ever, and, but for its own announcement, as promising for the future ten years as it did the first day of its existence. But we cannot resist the feeling of sadness that comes over us as we record its excellence and usefulness for the last time. This, the *tenth* volume of the "Agriculturist," closes the present series, and completes the cycle of its existence. We place this beside the nine preceding volumes on the shelves of our library, with feelings somewhat akin to those with which we consign some valuable and cherished memento of a friend to the most careful charge of a companion. The ten volumes contain a rare fund of valuable information, and contain an agricultural library in themselves; and we advise all who have not regularly supplied themselves with the work as it has been published, to procure it complete while full sets can be furnished.

Elwood's Grain Tables: showing the Value of Bushels and Pounds of different kinds of Grain, calculated in Federal Money, so arranged as to exhibit upon a single page the Value at a Given Price, from Ten Cents to Two Dollars per Bushel, of any Quantity from One Pound to Ten Thousand Bushels; with other convenient and useful Tables connected with Produce Transactions. By JAMES L. ELWOOD, Accountant. Philadelphia: Henry C. Baird, (successor to E. L. Carey,) corner Market and Fifth streets. 12mo, pp. 200. 1852.

We have examined the above work, with considerable care, and consider it a most convenient and valuable assistant to every grain buyer and seller. These Tables, the character of which may be seen from the title-page, which we have given in full, are certainly compiled with a degree of care and accuracy truly admirable. The arrangement itself has been pronounced by competent judges to be the most perfect, and the best adapted to the purposes intended, of any thing published; and we fully coincide with them in opinion. The fact that more than fifty of the most experienced grain measurers, merchants, and others, of Buffalo and Rochester, have highly eulogized and recommended the work, is a sufficient guaranty of its usefulness. We cheerfully concur in recommending its general adoption. The book is sold in this city by Charles Scribner, 145 Nassau street.

An Essay on Manures: submitted to the Trustees of the Massachusetts Society for Promoting Agriculture, for their Premium. By SAMUEL L. DANA. New-York: published by C. M. Saxton, 152 Fulton street. 12mo, pp. 60. 1852.

The fact that an edition of nearly *four thousand* of this work has been disposed of during the past season, is sufficient evidence of its value. It is, in our opinion, one of the best essays on the subject of manures, within a small compass, that has been published. Plain, concise, and directly to the point, it is just the book for every farmer in the country; and if every one who has not already possessed himself of it will do so, and attentively read and follow the instructions it contains, he cannot fail to realize a hundred-fold the trifling cost of the work every year. It is neatly published, convenient for mailing, and sold at the low price of fifty cents per copy. The work has been stereotyped by C. M. Saxton, of this city.

PAMPHLETS AND PERIODICALS.

FOURTEENTH ANNUAL REPORT OF THE PHILADELPHIA, WILMINGTON, AND
BALTIMORE RAILROAD—BRIDGING THE SUSQUEHANNA.

WE are indebted to SAMUEL M. FELTON, Esq., President of the above Railroad, for a copy of the fourteenth annual report, submitted to the stockholders January 12th, and promptly issued by John C. Clark, Philadelphia. It gives a very encouraging view of the condition of the road, and presents a statement of the various changes and improvements that have been made during the year. The total receipts were \$718,010 42; the total expenses, including interest on all debts, were \$513,192 46; leaving a surplus of \$204,817 96, which has been appropriated to buildings, relaying the track with heavy T rail, new machinery, dividend of $3\frac{1}{4}$ per cent., &c. A large and commodious depot has been rapidly progressing at Philadelphia, four hundred feet long by one hundred and fifty wide, which the Company intend to make the best passenger depot, as they believe it will be the largest, in the United States.

During a part of the year, an express train, connecting with lines north and south, has been run, and will hereafter be continued as a permanent arrangement, the time being four and a half hours from point to point. This makes the time from Washington to New-York about twelve hours. The through fare from Baltimore to Philadelphia has been reduced from four to three dollars, which has resulted in a small falling off in the revenue from through travel; but while the reduction of fare has been twenty-five per cent., the loss to the through revenue has been only six thousand dollars during the year, a deficiency which will be more than balanced by the receipts of the present year, and presenting a hint by which other roads may profit. The gain on the local business has more than made up for the loss on the through business, so that, upon the whole, there is a gain in the receipts for the year of about \$27,000.

While we are gratified with the prosperity of this important road, the great thoroughfare between the North and South on the Atlantic borders, there is a serious and intolerable drawback to its efficiency and usefulness. While the Company are furnishing their road with large, heavy and superior engines, relaying the track with substantial rail, and erecting new accommodations for passengers and freight, and are, furthermore, the mail-carriers on the most important route on the continent, the road is liable to frequent and serious delays, and is subject to constant detention and loss of time for the want of a proper connecting link at one particular point of the road; we mean the Susquehanna river at Havre de Grace, at which place it is crossed by a ferry-boat, and offers an almost insupportable annoyance to travelers, and to the mails, by the loss of time in changing from the cars to the boat, and thence debarking to reënter the cars on the other side. The unloading and reloading here occasion a loss of time on every train (and there are four trains a day) which amounts to an enormous aggregate during the year, while the expenses consequent upon it are very heavy. We say this detention is insupportable. Years since, it would have been regarded with quiet contentment, as a matter of course; but at the present time, when every facility which science or art can furnish is brought into requisition to render transit more speedy, economical and pleasant, it is too far behind the age to be quietly regarded. The remedy for this detention is a strong and substantial RAILROAD BRIDGE, which will remove the difficulties, and allow the cars to proceed without delay.

But, were the half-hour or more, lost on each train, to be deemed a matter of inferior importance, a more urgent necessity remains. The river is liable to be choked with ice, and thus impede the passage of the boat; so that no reliance can be placed in winter upon the time: and further, the river is sometimes but partially frozen over, so that it is impossible to pass at all. In such cases the great United States mail is sometimes detained eight-and-forty hours, waiting for transport; and passengers must either take a tedious staging of a dozen miles up the river, or go fifty-five miles out of their way, over another road, or wait the movements of the wintry king! During the present season this obstruction has occurred more frequently than usual, and at this writing the river is as firmly bound as though it were located in more hyperborean regions. The mails are very irregular, and the annoyance to the people of the whole country, whose interests in any manner depend upon this route, is extensive and serious. The ice is, however, now firm enough to permit the business of the road to be carried on by means of horse-trains and sleighs. Is it not preposterous that on such a route twelve hundred passengers daily

should be obliged to depend on horse-teams for their accommodation, when the obstacle can be so easily removed?

Interruption to navigation is the only possible plea that can be urged against the construction of a bridge, and this would be so slight as scarcely to be noticed. A properly constructed *draw* would obviate this objection. How is it with other roads? The Passaic river is bridged at two different places to accommodate railroad travel, the obstruction to navigation being relieved by draws. The Harlem river, seven miles from the City Hall, New-York, is bridged to accommodate the Harlem and New-Haven roads, and is crossed, on a single bridge, by more than *thirty trains a day*! The draw obviates the objection to the bridge. The rivers around Boston, not to mention other places, are crossed by no less than three railroads within a quarter of a mile of each other. The bridges are constructed with *draws* to accommodate vessels, and as many as six thousand vessels have passed through one of these draws in a single year. Probably more vessels pass through one of these draws in a single week than would pass at Havre de Grace in a whole year. The business is conducted quietly and peaceably, and what little annoyances do occur, are submitted to patiently *for the public good*. This is as it should be, and we commend the example of the Massachusetts Legislature in this respect to the law-makers of Maryland.

The Legislature of Maryland has this matter in its own hands. They have but to grant the charter to the Company which has before been urged upon the attention of that body, and a substantial iron and stone bridge, inferior to none in the country, will be speedily built, to meet the exigences of the case.

The Company have made an estimate of the probable expense of the bridge, which will cost not less than six hundred thousand dollars, more than half a million of money. This vast outlay they are not only willing but anxious to make, in addition to their other liberal expenditures, for the public good. They ask the Legislature of Maryland to grant them a charter, which we trust will be done without delay, that the work may proceed with all possible dispatch. The detriment to the interests of commerce alone, occasioned by the interruption of the mails for a day or two at a time, is intolerable, and ought not to be patiently submitted to by the public. We cannot believe that the present Legislature will stand in the way of such a great public work; an enterprise which will benefit the State not less than the country at large. Surely they are not so short-sighted as to believe that the interposing of a barrier to the great interests of the country will be an advantage to their own popularity, or to the State whose prosperity they are sworn to promote. We trust that the present condition of the river, and the detriment to the public interests in their various relations, will be presented to the legislative body of Maryland in such a manner as to secure immediate action, and that they will, at their present session, grant the charter so imperatively demanded. That the result will be immensely advantageous to the State itself, we believe; that it will be so to the commercial prosperity of every section of our widely extended Union, is too apparent to admit of a doubt. **LET THE BRIDGE BE BUILT, especially as *the public*, and not the company, are to be benefited by the result!**

Tallis's Illustrated London.

This elegant pictorial work, in commemoration of the Great Exhibition of All Nations, is a beautifully illustrated descriptive guide to the great metropolis of England, which cannot fail deeply to interest and instruct its readers. Each part contains from fourteen to sixteen fine engravings on steel, in addition to the descriptive letter-press, and is published at 40 John street, at only 25 cents. Parts 12 and 13 are just issued.

Tallis's History of the United States.

Part 10 of this finely illustrated history has just been published. None who desire a well-written and elegantly embellished history of our country should fail to subscribe for it. Each part contains a beautiful map or two steel engravings, together with forty-eight pages of printed matter, and is published by John Tallis & Company, 40 John street, at 25 cents.

EDITORS' JOTTINGS.

IMPROVEMENT IN PREPARING PHOTOGRAPHIC PAPER.—Mons. Gustave Legray, in a recent number of the *Moniteur Industriel*, describes a new method of preparing photographic paper, which, after a great number of trials, he states he has succeeded in accomplishing, even beyond his own expectations. The preparation, he states, is adapted to almost any kind of paper, which, thus prepared, so much facilitates the photographic process, and helps to secure a satisfactory result, that he entertains not a doubt of its being generally adopted.

The substance used for this size is virgin wax, which is kept at a temperature of 100° centigrade, in a large, flat vessel, and the paper is immersed therein until completely saturated with the wax. The sheet of paper is then withdrawn, and laid between several pieces of blotting-paper, over which a moderately heated iron is passed, which causes the blotting-paper to absorb the superfluous wax. If the paper is properly prepared, there will be no gloss whatever on its surface, and it will be perfectly transparent.

The waxed paper is then immersed in a warm solution, composed as follows:—

1000	parts of rice-water,
40	“ “ sugar of milk,
15	“ “ iodide of potassium,
0.80	“ “ cyanide of potassium,
0.50	“ “ fluoride of potassium.

The sheet of paper should be laid in this solution for half an hour, and it may then be withdrawn, and hung up to dry.

The paper is then immersed in a clear solution of aceto-nitrate of silver, which is thus formed:—

300	parts of distilled water,
20	“ “ acetate of silver,
24	“ “ crystallizable acetic acid,
5	“ “ animal charcoal.

The animal charcoal serves to render the paper more susceptible to receive impressions, and decolorizes the solutions when they have been previously used. The paper should remain three minutes in this solution, and in order to insure contact with the liquid, the two sides of the sheet should be rubbed over with a brush. The paper is then washed several times with distilled water, and well dried between pieces of blotting-paper. Paper thus prepared may be taken immediately into the dark chamber, and it is not necessary to subject the image to the action of gallic acid on its removal from the camera; this may be deferred till the evening, or even the next day, or the day following.

The paper may be kept in a dark place for more than a fortnight, without undergoing

any alteration; and in this respect offers greater advantages than any of the photographic papers hitherto known. The solution of gallic acid is composed of one part of gallic acid, half part (0.5) of azotate of silver, and 200 parts distilled water. The image is fixed, as usual, by the hydrosulphite of soda.

By this method Mons. Legray states that he is enabled to take twenty-five to thirty photographs a day. He submitted to the Academy a series of the specimens obtained by the process.

THE STEREOSCOPE.—The phenomena of vision have engaged the attention of some of the most distinguished philosophers, and various have been the theories propounded to explain the result of *single* vision with *two* eyes, which, of necessity, are under the influence of *two* impressions. Wheatstone has probably done more than any other individual in placing this phenomena in its proper light. His stereoscope presents the two images at the angle of reflection converted into a *solid* body, or rather, a body conveying to the mind an impression of *length*, *breadth*, and *thickness*. Sir David Brewster is stated, in the London Athenæum, to have recently modified this instrument by dividing a lens into halves, and placing each half so as to represent an eye—the distance between them being two and a half inches—very beautifully imitating the mechanical conditions of the natural eye. Such an instrument is used as a camera for photographic purposes; and daguerreotypes obtained in it, examined under a similar instrument, the binocular stereoscope, present a “mimic reality of the most deceptive character.” By this means, groups of figures, statues, etc., which, when looked at under ordinary conditions, present mere flat pictures, in the stereoscope become “beautifully raised in the highest relief, standing out from the surface in *perfect solids* to the deceived sense.” In fact, a group of portraits in this instrument exhibit all the fulness and roundness of life.

NEW-YORK AGRICULTURAL SOCIETY.—The meeting of this society took place on the 21st ult., at Albany, in the Assembly Chamber, Mr. Delafield, President, in the Chair.

The report of the Treasurer states that the cash on hand at the last meeting, and that received since, amounts to \$17,218 07, and the expenses to \$12,545 28. The balance on hand, in cash, is \$4,674 14; invested, \$7,600; plate for medals, \$644—total, \$12,318 14.

A committee of three from each judicial

district was appointed to report officers for the ensuing year, and to recommend a place for the next State Fair. The committee reported the following officers, which the society confirmed:—

President—Henry Wager, of Oneida.

Vice-Presidents—1st judicial district, James Monroe; 2d, Lewis J. Morris; 3d, A. Van Bergen; 4th, W. C. Watson; 5th, T. S. Flaxton; 6th, O. Chamberlain; 7th, Chas. Lee; 8th, J. A. McElwain.

Corresponding Secretary—D. B. Johnson.

Recording Secretary—E. Corning, Jr.

Treasurer—Luther Tucker.

Executive Committee—J. H. Corney, J. T. Blanchard, J. Butterfield, J. B. Burnett, W. Kelly.

The society decided that Utica shall be the place for holding the next State Fair.

Medals were awarded to several persons who received premiums at the late World's Fair.

To the Adirondac Iron Company, for specimens of steel, a gold medal.

To Thomas Bell, of Westchester, Gen. Harman, of Western New-York, and Wm. Hotchkiss, of Monroe, each a gold medal, for the best specimens of wheat.

D. B. Kurtland, of Rensselaer, silver medal for the best specimens of corn.

Mr. Pirason, of New-York, a silver medal for the best piano.

Mr. Palmer, gold medal for specimen of an artificial limb.

Messrs. Allen & Co., of New-York, a gold medal for cutlery.

Prouty & Mears, of Boston, a gold medal for best plough.

Mr. McCormick, a gold medal for grain reaper.

Mr. Johnson, who represented the society at the World's Fair, gave a very interesting account of the success of the American reaper in England.

Willard & Co., of Oswego, silver medal for corn starch.

In delivering these medals, Mr. Delafield, the President of the society, presented a series of highly interesting remarks, principally in relation to industry and skill at the World's Fair.

THE WESTERN WORLD INSTITUTE.—We are pleased to learn that an institution with this title has been organized at San Francisco by Mr. C. A. Shelton and his associates, for the purpose of the promotion in that State of internal improvements, and the advancement of all the great interests of agriculture, commerce, horticulture, mining, manufacturing, and the arts and sciences; improvement in the breed of horses, cattle,

and all other useful animals; and, generally, the development of all the varied resources of California, and of the whole western coast and its neighborhood.

To the present museum, they propose continual additions of all the rare and wonderful productions of the State and its vicinity, in mineralogy, botany, conchology, entomology, ornithology, ichthyology, &c.; the inventions and improvements produced by mechanical and scientific industrial labor and skill, and the collection of every rare and wonderful product of the South Sea Islands, Asia, Australia, &c., both for utility here and for distribution and interchange with similar institutions in the Atlantic and other American States, and Europe. Connected with the Institute is a conservatory, embracing a large variety of the choicest grains, seeds, shrubbery, plants, fruit, and ornamental trees, and the most rare and valuable horticultural and agricultural productions. To aid in the promotion of these objects, they solicit from agriculturists, manufacturers, miners, inventors, and all others feeling an interest therein, contributions in any department of natural history, science, and domestic industry, with a particular description of the article contributed, its discovery, origin, properties, location, or manufacture, or other information relating thereto.

An annual fair will be held for the exhibition of natural, artificial, and scientific productions, and the awarding to subscribers of gold and silver medals, diplomas, and other appropriate and suitable testimonials of merit, for successful competition in any branch or department. Lectures, also, and addresses on agriculture, commerce, geology, and mining, together with philosophical, chemical, and other experiments, are intended to be given at the halls of the Institute.

Such an institution will be an honor to the projector, and, we doubt not, tend very essentially to the development of the immensely rich and valuable resources of California.

GENEROUS OFFER TO KOSSUTH.—When Kossuth was in New-York, Messrs. TISDALE & BORDEN, agents of the Bay State Steamboat Company, (the Fall River route,) tendered him and his suite a free passage to Boston on board the steamer "Bay State," the finest vessel that floats upon any waters in the known world. This offer, which reflects much credit upon the gentlemen named, was in perfect accordance with the liberality and public spirit for which the company and their agents have long been distinguished.

THE REMARKABLE AZTEC CHILDREN.—The adage that "truth is stranger than fiction" seems to be fully verified in these remarkable children. They are attracting the attention and eliciting the admiration of thousands in our city, and indeed from almost all parts of the adjacent country. A contemporary pronounces them *the greatest living curiosities which the writer ever beheld*. There is no romance connected with the thing; it is all living, breathing, moving reality. They are the veriest Lilliputians ever witnessed in America, one being about ten, and the other seventeen years old; and their weight in pounds corresponds very nearly in number to the years of their ages. They articulate no sound, but we know no good reason why they cannot be "taught" both to talk and reason. They appear to be perfectly formed, with regular features, and the female, particularly, exhibits a very pleasing countenance. With fine flaxen hair and dark brunette skins, they display much vivacity and exhibit great activity. The back portion of the head seems to have been flattened for some purpose, but of this we are not quite certain. There is nothing repulsive or revolting in their appearance, but, on the contrary, the impression is rather pleasing than otherwise. A pamphlet containing a full account of these wonderful beings may be obtained at the exhibition. We invite our readers who have any desire to look upon two of the greatest natural curiosities in the country, to call at the Society Library Rooms, corner of Broadway and Leonard street, where every convenience and facility for the gratification of their wishes will be afforded.

CONCERTS BY THE HUTCHINSON FAMILY.—These favorite and universally known singers, who have delighted hundreds of thousands with their performances, have been giving a series of concerts in New-York. Their success is as great as ever; the popular appreciation and favor are as earnest and

as cordial as at any former time; and though Abby is not among them—and who could forget her!—the brothers are fully capable of sustaining the interest of their concerts, and winning the applause of the public. We need not commend them to favor; they have long since established their own title to the good will and esteem of their countrymen.

WORKING OF THE LEAVEN.—A gentleman in one of the Eastern States who has sent us several new subscribers, writes us as follows, under date of January 21st:

"If you will send me two copies of the November number, I think I can obtain you several more additional subscribers. Nassau street in your city is indeed a wonderful place for the production of articles for human purification, theological, medical, and political. Townsend's Sarsaparilla claims to purify the blood, and eradicate from it all bad humors, except British Free Trade; and *The Plough, the Loom, and the Anvil*, eradicates this last of the vicious humors to which the body politic is subject. Two obstinate cases of long standing may be reported from this place, perfectly cured, with only three months' use of your excellent remedy."

ECONOMICAL INDIAN OR QUAKER CAKE.—A most excellent and nutritious article of diet may be prepared by every good housewife in the following manner: Take a common tea-cup once and a half full of sifted Indian meal, the same quantity of wheaten flour, a cup full of molasses, and sour milk sufficient to reduce it to the consistence of stiff paste; add to this a table-spoonful of ginger, as much soda dissolved, and a tea-spoonful of salt; incorporate the whole well together, put the cake in tin pans about one inch deep, and bake in a quick oven. This, eaten hot with butter, is a highly palatable, nutritious, and wholesome dish, and much more digestible than more highly and richly seasoned food.

OUR CORRESPONDENCE.

RENOVATING LANDS.—I have a theory somewhat new here, in the culture of worn-out lands, that I take the liberty of introducing. I have a field of about forty acres of worn oak land, that was formerly known to be very productive. This farm having been long in the hands of English gentlemen, and tenanted without any restrictions, it became much worn down and impoverished. When I purchased it, about twenty-five years ago, not being one of those persons who believe in no other mode of

good husbandry than slaving and spending yearly the products of a farm in buying and hauling manure, I adopted a different plan. I am acquainted with some of our best farmers, that have practised this mode of husbandry for twenty years or more, and with one managing the most productive farm of any in this vicinity, especially in hay. In answer to the question, "Have you made money?" he acknowledged that he had run himself in debt. One other gentleman told me that he had expended thousands of dol-

lars in buying, hauling, and using manure, and that he did not ever expect to realize the benefit of it. Now this shows that, in some cases, at least, this highly approved practice does not always result in gain. I will now speak a little of the revised mode of husbandry, as being better acquainted with facts, and hope not to be considered as boasting, but as merely giving my own experience. I have never bought a load of manure since owning my farm, twenty-five years, and although living but three miles from the city, and use only what we collect from different kinds of stock, on the farm, with composting. The forty acre field spoken of, when purchased, a good portion of it was lying waste, producing pennyroyal and mullein. This was a sad "eyesore" to me. I run over it and sowed it in grass as fast as I could consistently, and soon had a respectable sheep pasture, affording keeping for over one hundred sheep. In a few years, I could take up a piece of good swarded ground from this field, noted for good crops. I have the last season divided the lot into two equal parts, for the convenience of tilling one part, while I suffered the grass to grow on the other, and to remain until I see fit to plough this grass in as manure, with the expectation of its answering a good purpose, without any thing else. This is my theory, extending it either to sowing it, in the last process of harrowing the corn, with rye and grass seed, or grass alone.—ABEDNEGO ROBINSON, Portsmouth, N. H.

REARING MULES AND HORSES.—MESSRS. EDITORS: The agricultural statistics, I believe, show that your State excels ours in rearing horses, mules, and cattle, while we lead you in hogs and Indian corn. About six hogs are reared in Tennessee to one horse and mule in New-York. I am one of those who think a great increase and improvement could be, with little pains, effected

in East Tennessee, at least in the rearing of mules and horses; and for the benefit of my brother farmers in that locality, or elsewhere I will give my plan of breeding. The success I have had is well known to my neighbors, and the contrast of my plan to the one generally pursued by my acquaintances in East Tennessee, will be readily observed by them. I make it a rule to never put a suckling mare, or mare with a young colt, to the horse or jack. After the colt is about five months old, I wean it, which is done by letting it suck the dam at periods still farther apart, milking the mare, as occasion requires, till she is dry. About this time, I put to the horse or jack, and never am disappointed in getting a foal the first trial. This brings one half of my stock in the fall, and one half in the spring; it gives my breeders good health and condition; it is one year's advantage to the colt in growth and susceptibility of use. I must forego arguments to support my plan, but respectfully ask my farming friends to apply their own judgment in the contrast, and try it. I have a mare now on my farm which I know to be eighteen years old. I have never failed to raise a colt from her every alternate spring and fall since she was three years old, and she is sound and sprightly to-day. It is necessary that mares should be well kept on healthy food. My feed is meal and cut straw, with hay. I have a horse (our old shaft-horse) I know to be twenty-two years of age, and yesterday he took a fright in the shafts, and, in spite of the driver, ran with the carriage against a post, and broke both shafts, which I mention merely to show the propriety of feeding ground food to horses. A neighbor of mine sold me a very fine mare, because he could not get a foal from her. I took her to my friend, the late Daniel Carmichael, and told his man to put her to the jack *every morning* till she refused. About the ninth trial she was sent home, and I never failed afterwards to raise colts from her.—A. L. BUREM, Mile Bend, Tenn., Oct., 1851.

TOPICS OF THE PRESS.

EXPERIMENT IN RAISING CORN.—Mr. William K. Kimball, of Cornish, N. H., in a letter to the *Journal of Agriculture*, describes an experiment in raising corn as follows:

"In October, 1850, I turned over a piece of green sward. In the spring I manured it highly with green manure from the barnyard, ploughed it about the usual depth, and harrowed it thoroughly. I then marked the rows north and south for planting, three and a half feet apart, by drawing a chain.

"My seed was steeped six hours in a solution of chloride of lime, and I dropped three kernels in the hill, the hills eighteen inches apart in the row. In each hill was dropped a small handful of compost, made of plaster, unleached ashes, and hen manure say two and a half bushels of plaster, three of hen manure, and eight of ashes. The hen manure was taken dry, and pulverized, and mixed with the other ingredients all in a dry state, and applied in that condition. The corn was covered one inch deep.

"The corn came up quickly and grew

with great vigor, and I had an excellent crop, estimated at eighty bushels to the acre.

"To determine the value of the chloride of lime and the compost applied in the hill, I planted two rows through the middle of the field with the same seed and in the same manure, without either soaking or compost. The difference was visible at a glance, through the season; and on harvesting and weighing the produce of adjacent rows, I found that the rows planted with dry corn and without the compost, yielded fifty-seven pounds to the row less than the other; making a difference in sixty-four rows, one and a half acres, of three thousand six hundred and forty-eight pounds, or fifty-two bushels; or about thirty-five bushels to the acre. I should add, also, that, besides the great difference in the quantity, the corn from the steeped seed, manured with the compost, is vastly better than the other, and worth much more, pound for pound."

EFFECTS OF DRAINING.—In the New-York State Agricultural Transactions, Mr. Daniel Bates, of Sullivan, Madison county, says: "I have tried both open and covered drains, but have been successful with covered drains. I commence by ploughing deep in the driest part of the year, generally in the latter part of August. I can ascertain where the springy places are, and can better decide how to average my ditches. I place the ditches so as to touch all the portions of the soil that are moist, in order to drain it as completely as practicable. [Mr. Gates makes his ditches out of loose stones on his farm, and covers with flat stones or slabs. His ditches are from eighteen to twenty inches deep, and about fifteen inches wide. He has ditches covered with slabs which have been made eleven years, and are still in good preservation.]

"As to the expense, it is but little more than to finish properly a good open ditch with sloping sides. The objections to these latter ditches are, that they so readily fill up, and occasion much waste of land. *The results of ditching have, I think, increased my land at least three times its former value.* I have raised on this land, so reclaimed, the season after the ditching was completed, the largest crops on my farm, of corn, potatoes, barley, and spring wheat. Some of it is now in meadow, which yields the first quality of timothy grass, where, previous to its being drained, it was scarcely worth mowing and gathering, and the quality very inferior.

"Mr. Sutton had seven acres of low, wet land, which he cropped with oats for four years, putting on twenty-five loads of manure to the acre, each year. He then underdrained it, cutting his drains two and a half

feet deep, and filling eighteen inches with stone, then filling up with earth. Length of drain on seven acres two hundred and three rods; cost, thirty cents per rod. His crop, before draining, *with manure*, was thirty-one bushels per acre; after draining, first crop *without manure*, seventy-nine and a half bushels, and has continued to produce well."

AGRICULTURE IN FRANCE.—A correspondent of the *Republic* remarks: "A trip of six hundred and fifty miles, from the northern to the southern extremity of France, justifies me in the expression of my opinion that God's sun does not shed its rays on so fair a land, or one so thoroughly cultivated. The whole country is literally a garden. Every square foot, from the mountain top down to the lowest ravine, is made to produce something, if it be susceptible of it. Their mode of planting or sowing their crops, whether on plain or hill-side, produces the finest effect on the appearance of the landscape; the space allotted for each crop is laid out in squares or parallelograms with mathematical precision, and, whether large or small, the best garden could not be divided with greater accuracy. As there are no fences or hedges, and as the different crops are in various stages of maturity, you can imagine the variety of hues that meet the eye, and the magnificence of the panorama that stretches out in every direction as far as the vision can penetrate. I am sorry to add, in this connection, that seven eighths of the agricultural labor is performed by females, while two or three thousand stalwart men in uniform are idling away their time in the barracks of the cities and villages. In the absence of fences, cattle secured by ropes are driven about their pasturage by females, and the sheep are confined within their required limits by boys, assisted by a shepherd's dog. Speaking of cattle reminds me that, notwithstanding fresh pork is abundant enough in market, both in England and France, I have not seen a live porker in either country."

SALT FOR FIXING AMMONIA IN MANURE.—It is well known that in a close stable, where there are many horses, there is a very pungent smell, affecting the eyes and nose, particularly when the stable is being cleaned out. This smell is occasioned by the flying off of ammonia, which is the essence and value of manure, and which volatilizes or flies off at a very low temperature; even the warmth of the manure in a stable will send it off, and it goes off in great quantities by the common heat of manure in a farm-yard, whether thrown up in heaps or not.

A writer in an English journal describes a very cheap and simple remedy for this

Before you begin to clean out your stable, dissolve some common salt in water; if a four-horse stable, say four pounds of salt, dissolved in two buckets of water, and poured through the nose of a water-pot over the stable floor an hour or so before you begin to move the manure, and the volatile salts of ammonia will become fixed salts from their having united with the muriatic acid of the common salt; and the soda, thus liberated from the salt, will quickly absorb carbonic acid, forming carbonate of soda. Thus you will retain with your manure the ammonia, which would otherwise have flown away; and you have a new and important agent thus introduced, viz., the carbonate of soda. As this is a most powerful solvent of all vegetable fibres, and seeing manures have to be rendered soluble before they can act upon vegetation, it will be at once apparent that the carbonate of soda so introduced must be a most powerful and valuable agent.

VALUE OF PAPER IN ARCHITECTURE.—There is, says Dickens' "Household Words," a *paper* church actually existing near Bergen, which can contain nearly one thousand persons. It is circular within, octagonal without. The relieves outside, and the statues within, the roof, the ceiling, the Corinthian capitals, are all of papier-maché, rendered water-proof by saturation in vitriol, lime-water, whey, and white of egg. We have not yet reached this pitch of audacity in our use of paper; but it should hardly surprise us, inasmuch as we employ the same material in private houses, in steamboats, and in some public buildings, instead of carved decorations and plaster cornices. When Frederick II. of Prussia set up a limited papier-maché manufactory at Berlin, 1765, he little thought that paper cathedrals might, within a century, spring out of his snuff-boxes, by the sleight-of-hand of advancing art. At present, we old-fashioned English, who haunt cathedrals and build churches, like stone better. But there is no saying what we may come to. It is not very long since it would have seemed as impossible to cover eighteen acres of ground with glass, as to erect a pagoda of soap-bubbles; yet the thing is done. When we think of a psalm sung by one thousand voices, pealing through an edifice made of old rags, and the universal element bound down to carry our messages with the speed of light, it would be presumptuous to say what can and what cannot be achieved by science and art, under the training of steady old Time.

AGRICULTURE IN OREGON.—A letter from Umpqua Valley, Oregon, published in the *New-York Courier*, says the climate is so

mild in that quarter of the globe, that sleeping out doors is no hardship. Even in winter, the ground in the valleys never freezes, so that oats, potatoes, and barley, are sown in the fall. The wheat has the largest berry ever seen. Oats of a corresponding quality are raised *five years in succession from one sowing*, yielding at the rate of fifteen bushels to the acre at each crop. Indian corn does not do so well, on account of the droughts in August and September; but potatoes, turnips, and other roots, in the moist locations, grow to a great size. No insects or weeds trouble the crops of any kind. Apples produce abundantly, and plums, crab-apples, raspberries, (a large yellow variety,) whortleberries, (a red species,) strawberries, and several other berries of fine flavor, not known at home, are very abundant. Government gives to every actual settler on public lands in Oregon, six hundred acres in fee-simple.

HORSE-POWER DITCHING MACHINE.—The *Family Visitor* states that Mr. Charles Bishop, of Norwalk, Ohio, has invented and taken measures to secure a patent for a good improvement in ditching machines, whereby the old method of ditching by manual power is entirely thrown into the shade. His machine is worked by horse-power, and is provided with a revolving excavator, the shaft or axle of which lies in the direction of the length of the ditch. The excavator is of a screw form, and is operated by an endless chain. The ditch is cut of a semicircular form, and it deposits the cut clay or other kind of excavated earth in a box, from whence it is delivered at one side of the road by scrapers attached to the endless chain, the machine being propelled forward by a friction wheel, or roller, moving in the ditch, and operated by the excavator's shaft.

GROWTH OF WOOD.—The season of the year in which forests are cut off, is believed to have an influence on the succeeding growth. To give some test of this matter, the Plymouth County (Mass.) Agricultural Society offered several premiums. A report was made last year, which sets forth the conclusion that the nearer the season of the ascending sap, (spring,) wood is cut, the more flourishing will be its succeeding growth. The person who received a premium for this experiment states, that he is satisfied that the nearer the ground wood is cut, the better; the shoots will start and grow more thrifty, and are thicker, and less liable to split down. By cutting wood often, you insure not only the greatest growth of wood, but the greatest growth of money. Cattle should never be suffered to run on a wood-lot while trees are small.

EDITORIAL AND SELECTED MISCELLANY.

THE report of the Massachusetts Banks shows the following results, as compared with the report of 1845, before the discovery of California gold:

	1851.	1845.	
Circulation,.....	\$19,694,000....	\$14,339,000	Increase,....\$5,855,000
Specie,.....	2,478,000....	3,357,000	Decrease,.... 879,000
Capital,.....	38,265,000....	30,970,000	Increase,.... 7,295,000
Number of banks,...	130....	104	

The average proportion of specie since 1815, to circulation and deposits, has been \$1 to \$7 28. The present proportion is \$1 to \$13 18. . . . THE State Bank of Indiana maintains a circulation of \$4,681,993, the largest, we believe, of any one institution in the country; though the Bank of Kentucky and Northern Bank of Kentucky taken together are larger. . . . Gov. WOOD, of Ohio, who was inaugurated on the 12th ult., expresses himself in favor of the maintenance of the compromise measures, and to the improvement of rivers and harbors. . . . THE *Buffalo Commercial Advertiser* announces the opening of the Buffalo and State Line Railroad from Dunkirk to the State Line. . . . THE principal productions of Florida are live oak, cotton, sugar, rice, indigo, oranges, figs, dates, grapes, limes, prunes, olives, &c. . . . LAST year, there were 342 boys in the Massachusetts State Reform School. . . . THE Portland Alms-House is without an occupant. . . . THE Cumberland coal trade in Maryland last year was 253,565 tons. . . . IN the State Lunatic Hospital of Massachusetts there is a preponderance of foreign paupers. . . . THE expenses of the National Armories at Springfield last year were \$271,308 33, and at Harper's Ferry, \$252,088 69. Total, \$523,397 02. . . . THE monster petition of Massachusetts for the passage of the Maine Liquor Law was conveyed to the State House lately in procession. . . . THE commerce of Cleveland grows with astonishing rapidity. The domestic exports last year were valued at \$9,817,897, and the imports at \$9,262,657. The cereals exported were alone worth \$3,898,131. . . . A PUBLIC meeting in favor of the Sault St. Marie Canal was held at Detroit on 5th ult. A memorial to Congress was adopted. . . . THE Calico Print-works at West Bloomfield, N. J., were burned down a few days since. Loss, \$30,000; insured in New-York. . . . THE Constitutional Convention of Delaware is to meet in March, 1853. . . . THE benevolent exertions of Miss Dix have incited the Buckeyes to pay attention to the insane. . . . THEY complain of cold weather at Savannah. THE *Republican* says: "If the 'oldest inhabitant' has ever seen anything like it before, he should make it known at once, or for ever hereafter hold his peace." . . . THE taxes of the city of New-York for the present year, according to Mayor Kingsland's statement, will be \$3,500,000. . . . PREPARATIONS are now making for the construction of a submarine telegraph between England and Ireland. The cable will be sixty miles long. . . . SHIVERS PARKER, Esq., a well-known politician of the old school of Tammany, died in New-York on Thursday, the 22d inst. . . . A TEXAS paper says, that the western part of the State is being most rapidly settled by Protestant Germans. . . . THE glory of great men is ever to be rated according to the means used to acquire it. . . . GREAT numbers of partridges have been frozen to death in New-Jersey during the recent severe weather. . . . THE Marine Mission Society in Boston have issued, during seventeen months, 22,464 Temperance papers, and 145,747 pages of books and periodicals. . . . THE Moravians have now 68 stations, 281 missionaries, 66,557 converts and persons under instruction, of whom 20,373 are communicants. Of these, 3,285 are Greenlanders and Esquimaux, 450 Indians, 55,948 negroes and persons of color, and 6,874 Hottentots and other natives of South Africa. . . . THERE was lately a mass of native copper, weighing 4,700 lbs., (part of a mass of 55½ tons,) taken from the mines of the Minnesota Mining Company, near the River Ontonagon,

Lake Superior, and which was exhibited for a short time in Wall street, in front of the Exchange. . . . THE Baptist State Convention of Mississippi have resolved to raise \$100,000 for endowing a college in that State. . . . THE cost of patenting an invention in Great Britain is \$1,500; in the United States, \$30. . . . To act is easy, to think is hard. . . . WE shall have twenty-three eclipses of the sun in the course of the next fifty years. . . . It is said the fortunes of the Rothschilds are not less than \$735,000,000. . . . The *St. Louis Intelligencer* publishes a list of the most serious steamboat accidents on the Western waters during the past year. The whole number is 48. Of these, 26 were caused by striking snags and other obstructions in the river; 8 were the result of explosions, 6 of collisions, 5 of fire, and the remaining 3 were boats sunk in a storm. The aggregate loss of life is computed at 227. Sixty-eight were the result of collisions, and 148 of explosions. The greatest loss of life in any single instance was at the time of the explosion of the Oregon, in March last, when from 45 to 50 souls perished. The destruction of property cannot fall short of a million of dollars. . . . THE Faculty of Harvard College have elected Dr. Arnoult, of Boston, to fill the vacancy in the Professorship of the French language. . . . THE *Charleston News* states that a number of gentlemen of that city have associated together for carrying on a large importing wholesale and retail dry goods business. . . . THERE were relieved or supported by Massachusetts, during the year 1851, 27,264 paupers, of whom 12,940 were foreigners, and 11,995 from England and Ireland. . . . THE United States steamships number thirty; four years ago, we had but one. . . . THERE are now forty-one newspapers published in Texas. . . . HALF the population of Wisconsin is said to be German. . . . BOSTON consumes daily six million gallons of Cochituate water. . . . THEY are about to connect Newfoundland with the United States, telegraphically. A great project, as the island is fifteen hundred miles east of us. . . . THE sides of stairs and passages on which are carpets and floor-cloths, should be washed with a sponge instead of linen and flannel, and the edges will not be soiled. . . . IN Cincinnati, on the 12th ult., the great case of Irwin vs. N. Longworth, involving property to the amount of over \$500,000, was decided in favor of the plaintiff. The case has been in court eleven years. . . . THERE were at the port of New-York one day lately 23 steamships, 119 ships, 93 barques, 91 brigs, and 187 schooners, colliers, &c. Total, 513. . . . THE census of Utah shows a population of 11,380. . . . You may glean knowledge by reading, but you must separate the chaff from the wheat by thinking. . . . THE steamboat Bay State, Capt. Brown, of the Fall River line, arrived at four o'clock one day in January, only about nine hours behind her time, notwithstanding she was obliged to cut her way through fifty miles of ice. . . . Two men were brought to justice the other week in Boston, and fined \$3 50 each, for playing cards on Sunday. . . . THE railroad across the Isthmus was opened on the 8th December, for part of the whole route. It was anticipated that it would be opened throughout in the course of two months. . . . THE mother of President Polk died in Columbus, Tenn., on the 12th of January, of apoplexy. . . . THE House of Representatives of Maine, on the 10th ult., passed, by a vote of 83 to 34, the following resolution:—*Resolved*, That we earnestly desire that the General Government of the United States may exert an influence, in some wise and proper manner, against all such intervention in the future as the Russian in Hungary. . . . THREE of the hands of the brig Rainbow, (a New-Haven vessel,) on shore on Point Judith, have been frozen to death. . . . THE Rev. Sebastian Streeter, of Boston, has married 3,174 couples in twenty-seven years—an average of over 100 per year. . . . MAJOR STICKNEY, formerly editor of the *New-Hampshire Patriot*, fell dead at Toledo, Ohio, a few days ago. . . . THERE were 2,550 marriages in Cincinnati during 1851. . . . THE failure of Josiah Quincy, of Boston, is announced, and is supposed to have originated in his connection with the Vermont Central Railroad.